185, 433, 654

Egypt	MR1
Turkey	MB1
Iraq	MH1
Syria	MD1
Lebanon	ME1
Historical Palestine	MF2

/For an account of the program of industrialization in countries of the Middle East after World War I up to 1945, see 66: Bonné, M1 Middle East, category 116 as follows: Turkey - pp. 274-284, Egypt - pp. 285-286, Iraq - pp. 287-289, Palestine - 289-290, Syria and Lebanon - pp. 290-291./

1: Longrigg G-4, 5 (ca. 1915-1940) MHI Iraq MHI

movements and haunted ministerial ante-rooms now thought of seeking their advantage by Government action rather than by tribal disobedience. Reports made in 1926 show satisfaction at the decrease of raiding, the willing recourse of tribesmen to the Sarays, better Government control, and fruitful use made of the Tribal Disputes Regulations—one of the most valuable legacies of the British régime.

8. DEVELOPMENT

If major irrigation works were precluded in this period by the poverty of the State, it was no less valuable that a permanent irrigation service, staffed by specialists and relying on ever-widening surveys, was watching conditions, accumulating data, constructing small works of immediate value—canal-heads, regulators, realignments—redesigning vital flood-banks, and planning the future. Without it, the stagnation and deterioration of the Turkish era must have continued, and the serious floods of 1923 and 1926, which with disastrous damage inundated outlying quarters of Baghdad itself, including a railway station and Customs warehouse, must have been yet more ruinous. Considerable canals from the mid-Euphrates left-bank above the Barrage—the Ṣaqlawiya and Yusifiya—were re-created and their lands carefully allotted. The Hindiya Barrage itself was extensively repaired and improved. The Department of Irrigation was administered by A. B. Aitken until 1921, by P. J. Sellier until 1925, and J. M. Wilson during that year, and by L. E. Bury from the Sudan from 1925–8.

In the field of agriculture, a department under an 'Iraqi director-general since 1924, J. F. Webster was Inspector-General in succession to the pioneer of Iraq cotton-growing, Roger Thomas; but here, too, far less could be attempted than the needs of the territory demanded. Land settlement could not yet be other than local, ill based, and occasional; the disastrous agrarian background was unchanged; and experiments in new crops, silk-growing, and seed varieties made at the Agricultural Institute must remain at present without effect on the prevailing practices of an agriculturally primeval peasantry. Nevertheless, a beginning was made with scientific cotton cultivation, for which high hopes were formed; the British Cotton Growing Association opened an agency and erected a modern ginnery. A large-scale general farm on mechanized lines was started by an Englishman near Mosul, but did not long survive. The Wolfra Syndicate, which hired land on the Diyalā and attempted modern farming methods, similarly could not overcome native conservatism and renounced its enterprise. The King himself owned an important estate near Khaniqin, and

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

farmed it with improved techniques; and an 'Iraqi-Syrian group, that of the 'Asfar concession', signed with Government in 1924 an ambitious land-development and irrigation agreement, involving the construction of the Ḥabbaniya reservoir, a Faluja barrage, and a dam on the Diyalā. Limited cotton-planting without notable success was carried out in 1925 by an Asfar affiliate, Diyala Cotton Plantations; but the terms of the main concession were soon afterwards called in question by popular outcry, its semi-monopolist nature was revealed, and the whole enterprise was perforce reconsidered.

Meanwhile, a Government anti-locust organization, on the scale which this ruinous pest demanded and using every known method, came into being in northern 'Iraq while Government participated in interstatal plans jointly established in Damascus. The deplorable harvest of 1924, the result of excessive cold and rainlessness, was a reminder of the precariousness of agriculture. The small Veterinary Department under Chadwick, besides its work with Army and Police horses and its civil animal hospitals, did what it could to control the endemic and epidemic diseases of the 'Iraqi flocks and herds, especially rinderpest which caused great annual losses.

Roads, mechanical installations, and buildings were the responsibility of the Public Works Department, of which the Directorship was passed by J. M. Wilson, in that office since 1920, to A. S. Clay in 1925. Roads were still at this period unsurfaced and deep in mud or dust, but constant care kept them somehow open. The mileage of road and track available for wheeled transport increased threefold, and hundreds of passenger and freight-carrying cars plied on every route. The care of these, with their accompanying repair shops, supplies, and dealers formed a new branch as much of industry as of travel. A trans-desert motor route, passing by Ramadi and Ruṭba to Damascus and the Levant, was inaugurated in 1923 by two New Zealanders, the Nairn brothers, whose headquarters was at Damascus. It had immediate effect on 'Iraq's foreign orientation. The service in 1926 absorbed its first (Syrian) competitor, which, using a track by Hit and Palmyra, had been the victim in 1925 of a savage attack by Dulaym tribesmen. The Ruṭba–Damascus section of the Nairn route became unusable in the summer of 1925 by reason of the Druse rebellion, and for a year thereafter convoys were diverted to 'Amman and Haifa through the forbidding lava country of Transjordan. The carriage of mails by the desert motor route became usual, until air-mail services superseded it. Postal arrangements within 'Iraq, now under 'Iraqi administration with British expert advice, grew more comprehensive and included all normal post office services. Telegraphs were

1s Longrigg G-4, 6 (ca. 1915-1940) MH1 Iraq MH1

operation under Tainsh was uneasy, but in practice tolerable; the transfer of ownership to a Railway Corporation of Anglo-'Iraqi membership was, as with the Port of Baṣra, provided in the 1930 Treaty. The service and maintenance of the 750 miles of line were hampered by abiding financial stringency due normally to road competition and the uncertainty of the pilgrim traffic, and abnormally to flood interruptions such as those of 1926 and 1930 and to the stagnation of trade in 1929–32. Two lines of railway development were followed, both of international interest: the first was the provision in 1930 of a link by motor convoy between Kirkuk and the Turkish railway at Nisibin, making possible direct bookings from Baṣra to Europe: the second was the prosecution in 1930–1 of the survey for a Baghdad–Haifa line—a project widely supported but destined, twenty years later, to be still as far from realization.

'Iraq's fortune was that of many contemporary nations in the rapid development of its air routes. A weekly mail service Baṣra–Baghdad–Cairo was inaugurated early in 1927, to be followed two years later by the England–'Iraq–India service of Imperial Airways. In the same year a first civil airport was ceded by the R.A.F., and the (German) Junkers Company initiated, but failed to sustain, a Baghdad–Teheran service. Soon afterwards aircraft of the (French) Air Union or Air France appeared, and those of the Royal Dutch (K.L.M.) line; 'Iraq's central position for air communications—the 'Clapham Junction' rôle asserted for it by Mr. Churchill in 1921—was fast revealing itself. A modern-equipped airport immediately outside Baghdad begun in 1931 was completed in two years, and civil landing-grounds were in use also at Baṣra, Ur, Ruṭba, and elsewhere.

The effect of the trans-desert route and the increasing east–west air services on postal communications was profound. Both were used as they came into being for letters, the former also for packages; communications with Europe and India were revolutionized. In 1929 'Iraq joined the International Postal Union. With the constant spread of the telegraph and trunk telephone network within 'Iraq went the increasing use of wireless. The Baṣra station already communicated directly with Europe; those of Ruṭba and Baghdad were ancillary to it.

If the uplifting of 'Iraqi standards of life could be assisted indirectly by these improvements, it must be sought more directly in the development of its old and some new resources. The efforts of the public and Government were active in this direction. No minerals, other than petroleum, were located. The Government salt monopoly could do no more than maintain itself. A gold concession granted in 1931 for the mid-desert Qa'ara Depression, near

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

Ruṭba, led to no discoveries. An experiment in the export of bitumen to India was short lived. Nor could industrial development proceed far, though it had its place in the programme of every Cabinet and in 1929 was encouraged by indulgent legislation in its favour. 'Iraqi capital, exploitable raw materials, a class of skilled artisans and local purchasing power: these were all lacking. The Government's Industrial Exhibition at Baghdad in 1932 had little to show. There had been local development of electric power and mechanized brick-making. Two ginneries, one British one 'Iraqi, stood ready for cotton that was slow to appear. Two wool mills dealt with the inferior local fleeces, small cigarette factories had transformed smokers' taste, a soap works and a tannery were indifferently successful. A cement factory was long projected, and in 1932 a concession was granted to Yasin Pasha and partners. To utilize 'Iraq's surplus products plans were made for a shoe factory, a fruit-canning plant, and date-sugar production. But the total of these could do little to solve the country's problems.

With the petroleum industry it was otherwise. Though oil export could not commence until late in 1934, it was established in 1927 that 'Iraq was to take its place among the world's great oil territories. The Turkish Petroleum Company's drilling campaign, inaugurated by the King with due ceremony in April of that year, was early rewarded by an oil strike of exceptional abundance at Baba Gurgur close to Kirkuk on 27 October; and while drilling at many locations proceeded with varying success, the dimensions and behaviour of the Kirkuk structure were confirmed by later tests as those of an oilfield of the very highest class, whatever others 'Iraq might prove to contain. The four years following were devoted, on the one hand, to preparing the Kirkuk field for production by drilling and scientific observation, and by the provision of necessary services—production installations, tankage, workshops, housing, and amenities—and on the other, to negotiating with Government for an extension of the period permitted for plot-choosing under the 1925 Convention, since much of northern 'Iraq had meanwhile been inaccessible to exploration: or, alternatively, for a recasting of that agreement itself. These negotiations ended with an agreement of March 1931 whereunder the Company (renamed 'Iraq Petroleum Company in 1929) renounced all its territory west of Tigris and south of latitude 33 but, within the retained area (which was the whole of north-eastern 'Iraq), could exploit not only chosen and limited plots but the whole territory. The Company promised to construct by 1935 pipelines to the Mediterranean of at least 3 million tons capacity, bifurcating at the Euphrates towards Haifa and Tripoli, and to pay annual lump sums of £400,000 (gold) a year to Government, pending production and

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

The daily lives of many Iraqis could be affected by progress in
312 agriculture than by even the greatest industry, and such progress in
653 this period was not negligible. The grandiose irrigation schemes for which the press and public called were not, indeed, at once attainable; maintenance, minor improvement, and research were rather the order of the day. Nevertheless, some works of fair magnitude were carried out. New headworks and canalization on the Diwaniya and Daghara branches of the Euphrates were undertaken, and improvements in the water-supply to the Suq rice-lands. Swamp-drainage at Karbalā was primarily a public health measure. A permanent weir across the Diyalā replaced annually renewed antiquated works and secured supplies for the Ruz, Khurasan, and Maḥrut canals. The Laṭifiya Canal, the new Iskandariya, the Shayshubar were dug or re-aligned. A clearance of the Baṣra creeks and a major regulator, opened by the King in 1930, on the Bad'a in Muntafiq country were works of great local value. With them went continuous researches, surveys, experiments in desalination and drainage, and efforts to maintain and improve the 'bunds', breaches of which could ruin a countryside as they did in the disastrous floods of 1926 and 1929, and the necessity for which only the completion of the long-standing flood-diversion schemes could remove. Such was the Ḥabbaniya project, conceived by Willcocks twenty years earlier and closely restudied from 1927 to 1932; in the last of these years tenders were called for and the work seemed imminent. Other major plans, postponed by lack of funds and incomplete data, were the Tigris barrage at Kut al-Amara to restore the Gharraf and to control the 'Amara rice-lands: the smaller Abu Ghurayb canal from the Euphrates left bank, begun in 1932: an 'Aqar Quf drainage project near Baghdad: a proposed reservoir at or near Qizil Rubaṭ to conserve Diyalā water for summer use: a new head for the Ḥilla branch: the Isḥaqi Canal, to take Tigris water from opposite Samarrā: and work on the main Euphrates channel near Shinafiya. The Irrigation Department was administered from 1925 to 1928 by L. E. Bury, who acted also as Adviser to the Ministry of Works and after 1927 to that also of Irrigation and Agriculture. W. Allard succeeded as Director of Irrigation from 1928 to 1933, and as Chief Engineer under an 'Iraqi director in 1933–4. Wheatley resumed the advisership of Communications and Works in 1929, and held it for the next eight years.

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654 Of the need to improve agricultural methods, if these canal works were to yield all their value, the public was little aware. In spite of continued research and experiment, the main agricultural problems of the territory were yet unsolved—those of soil deterioration, antiquated techniques, inferior crop varieties, low and impure yields, and harvests endangered by flood or drought.

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

Their solution must depend on the simultaneous and widespread working of forces of rural education, reliable security, sound land tenure and properly financed enterprise. Meanwhile, the annual locust campaigns in northern 'Iraq were developed jointly with neighbouring countries. Progress was made in hill-country tobacco-growing and treatment of the leaf on modern lines. Silk experiments continued, though with scant success. Cotton-growing was still restricted by unskilled cultivation and by pests. The produce of the great date-groves of southern 'Iraq was bringing difficult problems not only of improved culture but of organization and disposal, and civil war raged between growers and packers. Of the attempts at modern estate development (p. 17) none had yet succeeded. The projected Agricultural Bank could not, it was found, be inaugurated until clearer land-titles gave security for loans. The Aṣfar Concession was limited and revised to provide for the acquisition and development by the Company of the Laṭifiya estate, south of Baghdad; the Irrigation Department constructed the main canal at the Company's expense, and promising operations on the 65,000-acre area began under European management.

The main agricultural development of the time was that of river-side pump irrigation. This had been initiated before 1914 and moderately extended between 1920 and 1925. Aided by important fiscal privileges, it began thereafter to show remarkable increase, to the point of becoming a main feature of 'Iraq's economy. Installations in the liwās of Baghdad, Diwaniya, Kut, 'Amara, and Diyalā had by the end of 1930 brought the number of pumps to over 2,000, representing a million-acre increase of cultivable area. There was evident value in thus attracting capital to agriculture, utilizing the cheap oil available, exploiting the high-lying virgin lands, and avoiding the precarious chances of flood irrigation. But the development was not free from trouble. The attraction of cultivators to new lands rather diverted them from old than increased their numbers; improvement in yields, due to fresh lands and secure irrigation, was not matched by superior type or purity of crops. Estate management attempted by townsmen was sometimes short-sighted and uneconomic, and the hard times and low prices of 1930–1 brought ruin to many hopeful enterprises. These, moreover, jointly undertaken by an urban capitalist—often a Deputy or city notable—and a tribal shaykh or *sirkal*, were productive of puzzling difficulties of land tenure and rights. Neither the traditional occupancy of the tribe, nor the share claimed by the incoming capitalist, had any basis in law. Agreements between the parties often proved unworkable, and in practice did not always bring blessings to the cultivators. These conditions indicated, yet

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

by their many successors in later years was criticized by some as too favourable to the shaykhs and half-absentee urban land-developers, and unjust to the actual cultivators. It was true, indeed, that thousands of these remained legally landless and as dependent as ever; that many shaykhs, whose agricultural functions had been always limited and ill performed, became the registered owners of personal heritable '*lazma* rights' of considerable areas: and that town-dwelling pump-land exploiters were over-rewarded, by similar grants, for their enterprise. The criticism is not baseless, but has been commonly exaggerated. The Committees created no rights; they recorded what rights they found to exist. Their members were officials of 'intelligentsia' type with no shaykhly sympathies (but rather the reverse), and they sought genuinely among the cultivating workers on the land for '*lazma* right' candidates who could produce valid claim to some years of continuous past occupancy or revenue-paying; in tens of thousands of cases they found and recognized them; and only in the absence of such claims were rights registered in the name of the shaykh and his family.

No title was ever assigned to an absentee shaykh, though the residence of some of the grantees might be intermittent and not on the precise lands concerned. Of the rich townsman who obtained title to broad acres, it was just to recall that, spending capital and accepting the grim risks of 'Iraqi agriculture and an uneasy partnership, he had developed lands hitherto desolate and could perform, as the single cultivator lacking wealth, knowledge, and authority could not, the functions of landlordship in organization, capitalization, and improvement. In northern 'Iraq, small-holding was the rule and was defined and stabilized by the settlement; in central 'Iraq, though the new security of tenure and the lessening of boundary squabbles did not wholly comfort the laborious, underprivileged, ever-indebted fallah, whose personal lot was little improved, they removed a large part of the adverse background of shifting rightless chaotic land tenure which had long afflicted 'Iraqi agriculture. The indignation of Abu al-Timman's group under the Ṣidqi régime at the remaining inequalities led to the suspension of *lazma* grants; but the procedure under the original law was soon restored. Meanwhile Government pursued schemes to construct model villages, good in conception but at present trifling in results; and the settlement of nomads was attempted on the Abu Ghurayb and Ḥawija canals.

Agriculture proceeded on its ancient lines, but with an increasing official consciousness of its inadequacy. The bad preparation, the dirt in and adulteration of produce were still the despair of merchants, as were the archaic and wasteful methods, inferior crop

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

241 185 473 The Laṭifiya was no longer the only large-scale modern estate in operation. The Date Board, which had done much to modernize and stabilize the production and marketing of dates—and not those of the Shaṭṭ al-'Arab only—had wisely retained the system of export monopoly, with suitable amendment of terms and prices, throughout the war and after it, but the three-year extension granted to Andrew Weir & Company in 1950 was likely to be the last; the National Date Trading Company founded in that year would probably assume the functions of the export monopolist. Of the Company's own shares, 49 per cent. were allotted to the Date Association, 26 to the public, and 25 to the foreign packers and exporters.

654 242 185 Government maintained a College of Agriculture with a three-year course and main experimental estates at Abu Ghurayb (for agronomy, animal husbandry, pests, and soils) and at Za'faraniya (for horticulture, fruit, and vegetables), with smaller stations at Bakrajo, Ḥawija, Nineveh, Aski Kellek, and Baṣra, a main forestry station at Arbil, and nurseries in every liwā. Its experts selected, tested, and issued new seed varieties designed for higher yield, quality, and resistance: combated pests, notably by locust campaigns in the technique of which 'Iraq claimed to lead the world: caused the erection of a grain silo at Baghdad, and proposed another and greater at Baṣra, with modern grain storage bins at many centres. The department was in touch with local industry which could use as raw materials 'Iraqi oil-seeds, cotton, dates, barley, beet, wool, and tobacco. It was planning large-scale experiments in estate-management, and seeking crop rotations which would diminish the use of a fallowing system now recognized as intolerably wasteful. It was encouraging the growth of rural co-operative societies under the 1944 law, increasing its departmental Inspectorate, and founding Chambers of Agriculture. It interested itself in rural education and established agricultural schools in every liwā. It was promoting village settlement, in which field the interesting and promising Dujayla smallholding community (p. 323) was extended and perfected, and the foundation of others in the Ḥawija and elsewhere was put in hand. The Development Board allotted in 1951 more than 4 million dinars for the provision, in six years, of artesian wells and drinking-water supplies. The mechanization of agriculture was fostered by a country-wide system of depots and repair shops, administered as a Government monopoly under a special law and a separate Directorate-General; indeed, all the importance of mechanization—even with its serious difficulties of proper maintenance and supply—was appreciated as part of a future 'Iraqi agriculture which with great new areas under controlled irrigation was likely to find not land or water but man-

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

power as its chief limiting factor. Attention was being given to the increase and improvement of livestock, a major asset of the country; Ayrshire and Friesian bulls were imported and distributed, rams from a selected herd were sold to reliable farmers, laboratory work on wool was carried out. Yet other lines of progress were dairying, with experiments in cheese production, the breeding of improved mules and donkeys, the increase of egg production by improving poultry breeds. The allotment by the Development Board for the period 1951–6 was nearly 2 million dinars for agricultural research, 3½ million for small-scale reclamation schemes, 1¼ million for animal husbandry, and a million for swamp reclamation. The need for a measure of integration between animal husbandry and crop production, hitherto divorced, was realized, as well as the broad essential singleness of the effort which must be made in the fields of agriculture, irrigation, land settlement, rural education, and the provision of capital. It seemed certain as the nineteen-fifties opened that if this effort were made and sustained by public and Government, and in the absence of any general calamity, the prospects for agricultural development in this wide and favoured territory, within the ultimately fixed limits of its river-water and rainfall resources, exceeded those not only of any Middle Eastern country, but of any territory of comparable size elsewhere in the world; the growing of food for less fortunate nations could prove, indeed, to be the main part of 'Iraq's material contribution to humanity.

In the care of its forests not much had yet been accomplished beyond the limits of study, experiment, and the establishment of tree-nurseries; the wide but neglected forest areas (p. 29) of the north still lay untended and unimproved, lacking notably a modern forest code, a staff of trained foresters, and even detailed exploration. Some steps had indeed been taken to provide fire protection and to carry out by helicopter and air photography the first forest surveys, but few to prevent uncontrolled cutting, grazing, and trespass by the villagers. One million dinars were allotted by the Development Board for forestry development in 1951–6. The significance of these areas to soil erosion, silt deposit, and river flooding was understood, and plans were being prepared on these and allied matters; but only a beginning had been made to solve these problems or to move towards the large-scale action which must be involved, or to provide the 'Iraqi public with sources of fuel and timber at present lacking.

Although sea fishing, based on the Shaṭṭ al-'Arab, was but a limited resource, the rivers and swamps of the territory were the source of a fish catch estimated at many thousands of tons a year, and export of fish to the Levant—and in particular to the Jews in

3: Clark S-5 (1950) 1951 MH1 Iraq MH1

CHAPTER FIVE

SIGNIFICANT RECENT AND CONTEMPORARY ADVANCE IN IRAQ

000 Although the various obstacles outlined in the previous chapter are serious ones, there is a growing body of evidence which suggests that certain of them are being at any rate partly overcome; some of them in ways which are significant pointers to the directions along which positive advance towards compulsory education may be possible.

ECONOMIC AND SOCIAL ADVANCE FAVOURABLE TO EDUCATIONAL DEVELOPMENT

Certain economic and social advances are taking place which are likely to be favourable to the development of education, both as regards producing more revenue and in improving the standard of life of parents so that they can afford to allow their children to attend school.

241 407 *Evidence of Improved Agricultural Practice.* A few of the more enlightened landowners, especially those who are not absentee landlords and take an active interest in their farms, are engaged in the important business of applying power and science to the land. Large tracts of land in the rainfall region which have not previously been cultivated are being opened up by the mechanical plough. Indeed, it has been fascinating to see land which was hitherto regarded as desert being ploughed at night by modern tractors with headlights. Other landowners and farmers are experimenting, with considerable success, in the growing of relatively new crops such as American cotton of high quality. In some of the northern provinces there are cattle bred to considerably higher standards than formerly. The writer was present at a lively discussion between farmers who were suggesting ways of conserving by modern silage the nutritious spring vegetation most of which is at present only scantily cropped and then left to be burnt up by the summer sun.

654 It has also been gratifying to observe the growing interest which is being taken in certain of the experimental farms organized by the Directorate of Agriculture.

3: Clark S-5 (1950) 1951 MH1 Iraq MH1

promotion, is indicated by the following extract from a teacher's introduction to the first issue of a primary school magazine:

'Our Magazine.
Dear Pupils,

This is the first number of our school magazine. I want every pupil to read it very carefully because it is for you, not for the teacher.

Please read this paper carefully and ask me any question about it. If you do as I say, you will succeed in the examination.

Your Teacher,
Signed .....'

The Agricultural Primary Schools. The need for realistic village schools in Iraq has been advocated in the Report of the Monroe Commission and elsewhere. They have taken a long time to materialize, but there are now signs of progress.

In 1948 the Ministry of Education requested the Provincial Directors of Education to establish an experimental primary school in each province. One such school has since been provided in most of the provinces, not as an entirely new project but as an extension of an existing primary school. Several acres of land have been attached to these schools and some of them keep a limited amount of livestock. Some have modest dairy equipment, a stock of hand tools for the pupils and an agricultural machine such as a power-driven cultivator. One or two have a tractor. In the irrigation districts some possess their own water pump.

Unfortunately these schools were established during a period of retrenchment, and although the Ministry of Education launched this important experiment it was apparently unable to provide the money for other essential buildings and equipment such as handicraft shops, simple laboratories and materials for experiment. It was also unable to provide every such school with a teacher acquainted with the basic practice and principles of farming. Despite these initial handicaps, some of the agricultural primary schools have started courageously and have attempted to free themselves from a purely academic curriculum. In certain of the schools, apart from teaching methods of normal cultivation, experiments are being made in the growth of crops hitherto unfamiliar to the local economy. Indeed one teacher claims that, through his introduction of American cotton on to the school farm, the local landowner has since grown this crop on a large scale and has made a substantial profit from it. If this is so, it certainly illustrates the extra-mural influence of a village school which adjusts its curriculum to real life situations.

5:al Dalli S-5 (no date)1954 MHI Iraq MHI

PROBLEMS OF INDUSTRIAL ENTERPRISE IN IRAQ

ABDUL GHANI AL DALLI ✲

433 Modern industry in Iraq, as in many other underdeveloped countries, has made significant progress in recent years and especially since the end of World War II. It is not within the scope of this article to discuss the causes of this movement in their relation to over-all industrial development and industrialisation in Iraq. The discussion in this paper will, on the whole, be restricted to the problems of industrial enterprise in the private sector of the economy. Consequently, Government industrial plans, as well as the oil industry have not been discussed. Likewise, the paper does not deal with the wider regional aspects of modern industry. As far as Iraq is concerned, the main causes for the progress of industry are to be found in the abundance of natural wealth, especially in the form of oil, the relative plentifulness of cheap labour in urban centers, the hardships suffered by the population during the war owing to the shortage of essential industrial products, the exceptional profits made during the war by proprietors of such modern industries as then existed (e.g. woollen textiles, cigarettes, soap, etc.), the accumulation of large sums of liquid capital in relatively few hands as a result of war and post-war inflation, and finally, the positively helpful attitude of Government towards industrial development.

654 The Iraqi Government has always tried to encourage industry, and
652 has granted it various exemptions from taxation under the Law for the Encouragement of Industry, passed in 1929, and its amendments. In 1946 - 47, however, it took a more effective step in the creation of the Industrial Bank, with a capital of I.D. 500,000 wholly contributed by the Government. The Bank's function is to grant loans for the establishment of new industries and the expansion and improvement of existing industries, to participate in joint-stock companies formed for industrial purposes, to start new industrial enterprises on its own account if need be, and to offer various services connected with the import of machinery, materials, and the export

114 ✲ Abdul Ghani Al Dalli is Member of the Iraqi Parliament and Minister of Agriculture, and a former Director General of the Industrial Bank of Iraq.

654 of products.[1] Financial assistance thus provided by the Government,
652 together with the new Law for the Encouragement of Industry issued in 1950, proved of great potency in the development of industry. The capital of the Industrial Bank was increased in 1952, to I.D. 3,000,000 of which I.D. 1,200,000 have already been paid up.
433 These and other measures, such as increases in custom duties
656 and the restriction or prohibition of certain industrial imports, have produced marked progress in the establishment of new industries and the re-equipment and expansion of old ones, especially since the end of World War II.[2] This can be seen from the following table:

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465

Development of Large-Scale Industry in Iraq 1948 - 1952

Year (1st April - 31st March)	Capital Invested I.D. 1000	Value of Annual Output I.D. 1000	Number of Employees	Wages paid annually I.D. 1000
(Seven large Industries)				
1948 - 49	3,183	1,403	1649	
1949 - 50	3,194	1,555	2626	333
1950 - 51	4,206	2,631	3443	406
1951 - 52	4,415	3,600	3837	486
(Ten large Industries)[3]				
1951 - 52	4,835	4,424	4533	599

1 Industrial Bank, Compilation of Laws, Regulations, etc. Government Press, Baghdad 1951.

2 For pre-World War II industrial development in Iraq see:- *A Handbook of Mesopotamia*, H.M.S.O., 1917. *A Report on the Progress of Iraq*, by H.M. Government to the League of Nations. H.M.S.O.,1931. *The Iraq Directory*, Baghdad, 1935 (English Edition). *The Economic Organisation of Iraq* (In Arabic), Editor Said B. Himadeh, Beirut, 1937.

3 See the *Annual Report of the Department of Industry 1951-52*, Ministry of National Economy, Baghdad. (In Arabic)
The Report of the National Bank of Iraq, 1949-50, p. 46 (in Arabic) states that national production of cement, beer, vegetable oil, soap, leather.. etc., has been substituted for similar imports with the result that value of imports fell from I.D. 2,984,000 in 1948 to I.D. 1,298,000 in 1950, and the deficit in the balance of trade was reduced by I.D. 1,686,000 due to this reason alone during the same period.

The ten industries referred to in the table are: cotton spinning and weaving (one establishment), cement (one establishment), wool spinning (two establishments), modern tanning (five establishments), beer (one establishment), alcohol (three establishments), vegetable oil (one establishment), modern soap making (one establishment), artificial and natural silk weaving (six establishments), jute spinning and weaving (one establishment still under construction). The total is 22 establishments all of which enjoy government assistance under the Law for the Encouragement of Industry, and practically all have received financial aid in the form of loans or capital participation from the Industrial Bank. None of them employs less than 20 workers, and the majority employ over a hundred workers. All use power-driven machinery. It is interesting to notice that most of these industries are owned by joint-stock companies and that they have distributed profits during the last three years ranging from 9 per cent to 25 per cent.

Obviously the table does not cover the whole field of industrial development in Iraq. It has been constructed on the basis of a selected sample to show the rapid progress made in recent years. The unusual increase in ouput compared with the rate of capital investment as shown in the table is to be explained by the fact that most plants were still under construction or half-completed in the early years. A complete survey of the industrial sector in the economy of Iraq is still to come. The Central Bureau of Statistics, Ministry of National Economy, is expected soon to embark on this task. Such a survey will have to cover, in addition to those industries included in the above table, the following:

(a) Other modern industries in the private sector which represent a substantial portion of the whole, such as flour milling, workshops and agricultural machine repair shops, printing, cotton ginning, cigarette manufacture, the building materials industry, shoe-making, etc.

(b) The great oil industry owned and operated by powerful foreign concerns holding concessions from the Government. The oil companies produced nearly 8 million tons of crude oil and 400,000 tons of refined products in 1951, and employ over 12,000 workers. Their production is expected to rise to 20 million tons of crude oil in 1955-56.

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(c) Industrial enterprises being carried out directly by various government departments and agencies such as the Iraqi State Railways, the Port of Basrah, the Ministry of Defence, the municipalities, and the recently set up State Oil Refinery Administration which has already undertaken the construction near Baghdad of an oil refinery with an annual capacity of 1,000,000 tons of refined products, at an expected cost of about I.D. 7,000,000.

(d) Various handicrafts and semi-mechanised industries such as the date-packing industry.[1]

433 It need hardly be said that, although recent industrial development has been marked, it is still quite limited in relation to the economy as a whole and in comparison with industrial development in neighbouring areas. In Lebanon for instance, the industrial sector has been found to contribute approximately LL. 135 million, or 17 per cent of the total national income estimated at
434 LL. 830 million.[2] In our estimation, the industrial sector in Iraq contributes no more than 10 per cent of the total national income estimated at I.D. 150 million.[3]

000 The problems arising from, and the difficulties standing in the way of, industrialisation in Iraq, will now be discussed.

Industrialisation in general means the introduction of modern industry into an area which has been up to that time dependent for its livelihood on agriculture, trade and craftsmanship. Such an area would have had no experience of mechanised industrial processes, the organisation of modern factories, the division of labour inside such factories, nor would it have any clear idea of the material and human resources that such organisations would demand. Assuming that industrialisation of such a "new" or underdeveloped area is a desirable thing, two sets of problems seem likely to emerge. The first set of problems is connected with the ways and means of developing industry with reasonable speed. The second set of problems relates to the psychological, social and political effects that modern industry brings about.

1 For a brief but fairly comprehensive survey of industrial output and possibilities in Iraq see: *The Economic Development of Iraq*. Report of a mission organised by the International Bank for Reconstruction and Development. The Johns Hopkins Press, 1952. p. 148-50, also Annex D. p. 277 and following.

2 *National Income of Lebanon, Monograph No. 3* by Albert Y. Badre, Ph. D., and Assad Y. Nasr, M.A., Beirut, Lebanon, May 1953. Especially p. 24.

3 The ratio for more advanced countries is between 30 and 40 per cent.

000 industrial shares or bonds, local capital will continue to be held
455 in hoards, or invested in trade, agriculture and real estate. Speculation in land values, especially urban sites, has come to play a great part in the economy of Iraq, and incidently absorbs a great
000 deal of capital. The problem lies then not in the deficiency of capital resources, but in the utilization of these resources and above all in the creation of a suitable environment to induce private enterprise and capital into the industrial field. In the writer's view the creation of such an environment is the core of the industrialisation problem in under-developed areas. As things are, private enterprise is primarily absorbed in trade, agriculture and speculation — especially in real estate — where easy money can be made, and the whole economy remains stagnant. Once this problem is tackled both local and foreign capital will flow in. The State, that is the highest authority in a society, is called upon to take the initiative. Its action must include financial, technical, educational and administrative measures.

654 In Iraq the State has made attempts to deal with all these as-
433 pects. In the fiscal field it has afforded protection for industry in
[439] the form of high tariff duties on most industrial products and in the exemption of power-driven machinery from such duties. It has prohibited or restricted the import of articles the like of which are being manufactured in Iraq, such as cement, cotton yarn, vegetable oil, soap, tanned leather, beer. Industrial schemes are given priority in the granting of import licences and the allocation of scarce currencies for purchases from abroad.

The new Law for the Encouragement of Industry passed in 1950 consolidated early legislation and made new concessions. Under this Law Iraq-owned industrial enterprises, that is enterprises in which 55 per cent of capital at least is held by Iraqi nationals, are granted exemptions from income and surtaxes for four years; exemptions from import duties (not included in the tariff exemptions) on machinery, materials, equipment, spare parts and containers; exemptions from property tax for 10 years; and use of Government land free of rent up to 25,000 square meters. Industries enjoy these concessions as long as they use raw materials available in Iraq or produce goods imported in cosiderable quantities. In any case they should use chiefly power-driven machinery in their works. These measures without doubt played a significant part in

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the development of industry sketched above.[1] Industries which existed then or have come into existence since have benefited considerably from these concessions. But private enterprise remained shy of industrial activity until the establishment of the Industrial Bank in 1946-47. Through this Bank, the State showed itself not only willing to forgo some revenue in the interests of industry, but to provide cash, and to share in the risks of industry. As mentioned above, the Industrial Bank could not only give loans (against real or personal security), but also participate in the capital of joint stock companies. Its greatest value in my view lies in the fact that it can become a founder or promoter of industries and thus lead the industrial community and the investing public into new fields. However, the Bank was handicapped in the early stages, by the inadequacy of the financial resources at its disposal and the absence of economic and technical studies by which the feasibility of proposed industrial schemes might be judged. Moreover, the Bank lacked, and to some extent still lacks, a qualified technical staff. It has often to rely on the judgement of the Board of Directors or the advice of specialized Government departments such as the Directorate General of Industry and the Directorate General of Agriculture, which are not always fully equipped for the task. The Bank has continually asked for scientific surveys to be made of the mineral, agricultural and animal resources of the country. It has also called for an integrated economic plan covering industry, agriculture and other economic activities, in which the Bank, like other institutions, will play its particular role.[2] There has been strong resistance on the part of the Board of Directors to the allocation of money for technical staff or technical studies by experts, and often when money was allocated, it could not be spent because the Board disagreed on the qualifications of such experts (foreign or national) or the need for inviting them to study particular problems. However, as years passed and the financial position of the Bank improved, a section for the study of industrial schemes was formed and members of it were charged with the study of certain problems at home or abroad. A number of ad hoc committees of specialists available in Iraq were set up to study and report on proposed industrial schemes. Contact was estab-

[1] No provision was made, however, for direct subsidies to industry, and no legal preference in government contracts was given to home industry.

[2] See First Annual Report, Industrial Bank 1946-47/1947-48, Baghdad. (Arabic)

652 433 654 lished with various Government departments, and data were collected, classified and sometimes published for the guidance of would-be entrepreneurs. A number of foreign experts were invited to study either particular schemes (such as paper, sugar, artificial silk fibre, the exploitation of salt, etc.) or to concern themselves with industrial development in general, and make recommendations for improvements in existing industries or for the establish-
652 ment of new industries. In addition to the absence of a general investment policy and planning, and the lack of economic and technical data to guide the activities of the Bank, there was, in the years 1947-50 the handicap of inadequate financial resources. When the Bank opened for business in 1946-47 its nominal capital, in accordance with a decision taken early in 1940, was fixed at I. D. 500,000. This figure was out of proportion with the changed level of prices and incomes, and the expansion of industry which had taken place meanwhile. Furthermore as the capital of the Bank was provided by the Treasury as a loan, it was up to the Treasury to decide what amounts to pay and when to pay them, and its decisions often did not coincide with the Bank's requirements either for funds or for making forward plans.

This situation, however, has completely changed as a result of increased Government revenue from oil in accordance with the Oil Agreement of 1951. The capital of the Bank was raised to I.D. 1,000,000 in 1951 and to I.D. 3,000,000 in 1952. Earlier, in 1948, 1949, and 1950, the Bank was forced to borrow from the reserves of certain Government departments, e.g. the Directorate General of Awqaf, Government Staff Guarantee Fund, and from other banks (especially the National Bank of Iraq). This form of borrowing was found to be less costly and more elastic than borrowing from the public. Another important source of capital which has developed in recent years is the annual net profits of the Bank. These have risen from I.D. 4,066 in 1948-49, to I.D. 7,745 in 1949-50, to I.D. 60,591 in 1950-51, and to I.D. 99,463 in 1951-52. The average rate of loans granted to industry in the last five years has been about I.D. 150,000 annually,[1] with an average loan period of three to four years. Hence a sum of I.D. 40,000 to I.D. 50,000 is repaid annually to the Bank. The paid-up capital of the Bank stood at I.D. 1,200,000

[1] The rate of interest was reduced from 7 per cent per annum to 5 per cent by decision of the Ministry of Finance in 1951.

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in 1952, but it can safely count on an annual payment by the Treasury on capital account of no less than I.D. 200,000. The Bank therefore can be said to be now in a sufficiently liquid position to meet any legitimate demands made upon it.

The International Bank Mission[1] has recommended that "the Bank's capital should be used primarily as a revolving fund. The Bank should generally dispose of its industrial shares whenever an enterprise becomes profitable and, therefore, capable of attracting more private capital." This view is no doubt inspired by the shortage of capital from which the Industrial Bank, as well as other financial institutions, had suffered before the Oil Agreement of 1951. It is clear that the Bank must not, however, be hasty in disposing of shares if it is to perform its important function of encouraging enterprises and capital investment in industry. This can be seen more clearly from the following considerations. First, most of the industrial concerns in which the Bank participates are still under construction (a process which requires two to four years in Iraq), and the few which have gone into production and distributed profits have only done so in the last three or four years. Any large sell-out by the Bank, which holds between 25 and 40 per cent of their shares, is likely to shake confidence in these concerns and create unforseen difficulties for them. Secondly, there is no organised stock exchange in Iraq and the market for shares is so limited that any large sale of shares may lead to a fall in prices which would hit small investors and benefit speculators, while it might harm the credit of the Bank. Thirdly, the stake which the Government now has in the capital of so many industrial concerns helps to reassure private enterprise that it will not retreat from the generous policy it has so far adopted towards industry. Another important consideration in this respect is that Government participation in industry through the Bank gives it a useful instrument, if it wishes to make use of it, for the supervision and control of industry.[2] It seems obvious therefore that the Bank cannot easily use its capital as a revolving fund.

(2) The Supply of Raw Materials and Power: Iraq is potentially

[1] See the International Bank of Reconstruction and Development. *The Economic Development of Iraq*, Report by a Mission of the Bank. Washington 1951. Annex D, p. 295.

[2] During the past five years, the Bank has made, only one sale, 3,000 shares out of 24,000 shares it then held in the Iraq Cement Co., in 1951, by public auction.

433 materials and spare parts is due to many factors. First is past
471 experience of the difficulty of obtaining such materials, due either to Iraq's distance from international markets, or to the shortages of world supply, or to the arbitrary attitude of suppliers abroad. Secondly, the fear of interruption of supplies owing to international emergencies and restrictions in the countries of origin. Thirdly, the influence of directors or big share-holders who own agencies for such materials or spare parts.

433 (b) There is great scope in Iraqi industry for improvement in the layout of machinery, flow of material, lighting, noise abatement, and temperature control.

466 (c) The problems of labour recruitment and organisation, systems of wage payment, housing and workers' welfare in general, fall outside the scope of this paper. It is sufficient to say that present labour legislation provides for weekly and annual holidays, for compensations in cases of injury or total loss of life, and prohibits the employment of children under twelve years. Industry is subject to inspection by officials of the Ministry of Social Affairs for the purpose of enforcing the labour laws. The formation of trade unions is permitted under the law, but so far labour organisations have played very small part in industry.

433 (8) State Assistance and Control: The main characteristics of in-
654 dustry in Iraq should by now be clear. It is of a recent development. It has developed largely under state protection and assistance. It has to operate within a very small market. The fact that industry is still in its infancy makes it hard to predict its future course. The part which government assistance has so far played in its development is of special importance and calls for examination. State assistance has taken various forms; tariff protection, exemptions from various taxes and duties, and financial aid through the Industrial Bank. Except possibly in the last case, government assistance to industry has not been based on any criteria of efficiency, or economic or social objectives. Any firm can obtain the benefits of state encouragement as long as it fulfills two conditions only; that it will use raw materials available in Iraq, or that it will produce goods imported in large quantities. It is necessary, if industry is not to grow lax behind the high walls of protection, to set up standards of efficiency, and to relax protective measures such as the prohibition of competitive imports, as soon as experience is acquired and production costs are stabilized. Benefits under

the Law for the Encouragement of Industry are granted irrespective of the locality in which the Industry is to be established or the type of industry embarked upon. Industries established in crowded, highly developed areas are given the same advantages as those established in remote, less developed districts. The manufacturer of producer's goods is treated equally with the manufacturer of consumers' goods and luxury goods. The criteria upon which an industry's claim to benefits is judged stand in need of drastic revaluation.

The limitation of the market in Iraq not only restricts the possibilities of large-scale development of most industries but it affords opportunities for monopoly control by one or two plants in certain fields. The danger of monopoly and exorbitant prices is already in sight in such industries as cement, beer, cotton and woollen textiles. The encouragement of new enterprise in these fields, or the relaxation of state protection to allow healthy competition, or direct intervention by the state to fix prices in relation to costs, is necessary to restrict monopoly power in the interests of the consumer and to preserve public confidence in industry. It is only on the basis of such confidence that the government can continue to give support and material aid to industry. The Iraqi Government has ample powers for dealing with the abuses of monopoly under the provisions of the Law for the Organisation of Economic Life of 1941.

The government can also extend its control over industry and prevent abuses by proper amendments to the law governing joint-stock companies. There is need to restrict the grant of free-shares or "water" shares to promotors, the creation of founders' shares with special powers of voting or percentage of profits, the interlocking of directorships, and abuses on the part of management in respect of purchases of materials and equipment, and sales of finished products. In particular, managers of joint-stock companies should be prohibited from trading on their own account especially in goods related to firms under their management.

The Industrial Bank has often been urged, as a shareholder in many industries, and with its representative on their boards, to exercise control over their price and sales policies. This suggestion derives from the prestige which the Bank has acquired in relation to industrial development. It has undoubtedly helped to iron out many difficulties, to improve management, and prevent abuses. But it is going too far to suppose that the Bank can actual-

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[For a detailed outline of the Development Program for Iraq recommended by the Mission which went to Iraq in 1951, see category 116, pp. 72-119.]

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as 60,000 people are engaged in industrial production (other than oil), virtually all of these are employed in small undertakings where the work is largely done by hand and productivity is accordingly quite low. Probably only about 2,000 are working in what might be characterized as modern industrial plants.

Fortunately prospective increases in government revenues from oil now make it possible for the government to undertake a large-scale program for the development of the country. Past investments in the oil industry will in the future yield large dividends in the form of a rapidly increasing production of petroleum. In accordance with an agreement reached in August 1951, subject to ratification by Parliament, the three internationally-owned oil companies operating in Iraq have undertaken to raise oil output, which amounted to only about six million tons in 1950, to 30 million tons per year by the end of 1955 and to turn over to the Iraqi government half of the profits before the deduction of taxes. On this basis it is anticipated that, over the next five years, the governmen may receive net revenues amounting to as much as 214 million dinars from oil alone. Under the terms of a law passed in 1950 these revenues will be available to finance development. They will be assigned to the Development Board, an autonomous agency established in 1950 to ensure greater continuity in the planning and implementation of development programs.

In the past, financial stringencies have severely limited public expenditures. The government has often had difficulty in making both ends meet. Severe economy has been the rule. Development outlays had to be kept small; government salaries were not raised in accordance with the increasing cost of living; and local administration was starved of funds. In the future the situation will be reversed. The principal task will be to find ways and means of spending rapidly increasing revenues in a manner which will contribute most effectively to the permanent development of the country. It is with this task in view that the Mission has drawn up its recommendations.

Any program for realizing the economic potentialities of the country should be broad in conception and well balanced. Investment outlays in dams and irrigation works, transport facilities and industrial plants must be complemented by increased expenditures

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on the land. There is apt to be increasing pressure on the landowner to take such steps as a result of the growing opportunities for alternative employment created by a large increase in public expenditures on development, the expansion of industry and the opening of state lands to settlement. In fact, unless the sharecropper's status is improved, there is a great danger that there will be a continued flight of labor from the land, impairing the country's agricultural production.

The government itself has made only a modest contribution to the advancement of agriculture. The Directorate-General of Agriculture is only a subordinate department in the Ministry of Economics and has been severely handicapped by lack of funds and a shortage of competent agricultural officers. While it has had some success in combatting pests and diseases and in the extension of such crops as cotton and citrus fruit, too little attention has been devoted to practical research, and almost no field work has been carried out to assist cultivators in improving their crops and methods of cultivation. The expenditures of the Agriculture and Veterinary Departments were actually cut from ID 1,160,000 in 1948-49 to ID 540,000 in 1950-51 and, at the latter figure, represented only 1.8 percent of the total budget outlay. Expenditures on both agriculture and irrigation 1950-51 amounted to only 6.7 percent of the total.

Plans for the future now envisage large water storage and irrigation projects to provide more water for land already in use and to increase the area under cultivation and provide for the settlement of new land. These plans are in general quite sound. They will be largely ineffective, however, unless at the same time more stress is placed on arresting the deterioration of land already in use by extensive drainage schemes and on raising the productivity of agriculture by other means. The establishment of an efficient extension service and the provision of incentives to improve methods of cultivation are particularly important in this connection.

Expansion of Area under Cultivation: Irrigation

Extension of the area of land under cultivation is vitally important not only to an increase in production, but, above all, as

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losses. While the Bank should presumably show a small profit to inspire confidence in its operations, it should not retain its participation in profit-making enterprises for the sake of maximizing its profits, particularly when this limits its ability to assist other industries.

To prepare the Bank for its expanding operations, its staff needs to be strengthened by providing for the appointment of an expert with wide industrial experience to head its Industrial Schemes Section and for the establishment of a small-business branch to pay special attention to the needs of small enterprises. The Bank should, of course, have access to the corps of technical specialists which, at a later point in the report, the Mission recommends should be attached to the Development Board.

Dangers of Excessive Protection

Particular care should be taken that government assistance does not foster inefficient industries at the expense of the country's standard of living. This danger is by no means unreal. A Law for the Encouragement of Industry, originally enacted in 1929 and replaced by a new act in 1950, provides limited but generous exemptions from income and surtaxes and customs duties, and government land free of rent for 10 years. Iraqi-owned industrial enterprises can qualify for these benefits as long as they primarily use raw materials available in Iraq or produce goods imported in considerable quantities. Neither of these conditions is necessarily relevant to efficient production; and it is therefore suggested that the law be amended to stipulate that, in general, such benefits should be accorded only to enterprises which have a reasonable prospect of becoming efficient enough to withstand foreign competition.

Industry is also protected in many cases by high import duties and in some cases, such as cotton yarn, beer and cement, by import prohibitions. In a small country like Iraq, where the limited market affords opportunities for only one or two plants in each field and where the entrepreneurial class is small, there is an acute danger of monopoly and attendant high prices. In Iraq this danger is aggravated by a tendency in some industries to emphasize limited production with high profits per unit rather than mass production with lower unit-profits. While the Mission recognizes the need for

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temporary, moderate protection of certain industries, it wishes to emphasize strongly the need for a rapid and progressive reduction in special assistance.

Government Organisation for Industry

Government activities relating to industry, except for the Industrial Bank, are now handled by a Department of Industry in the Ministry of Economics. This Department under its present director concentrates primarily on research and laboratory work and is not equipped to analyze and record the commercial and economic operations of industry. The Mission recommends that a Department of Industries be established to maintain adequate statistical records on industrial production, analyze economic problems relating to industry such as marketing, and administer the laws concerning assistance to industry. The research and technical functions now being carried on would then be continued under a separate Department of Industrial Research and Standards.

These two departments should gradually be equipped to give increasing assistance to industry in improving its output and reducing its cost of production. This type of assistance should be stressed more and more in the future as compared to special measures of protection and assistance which tend to shield industry against competition. Much can be done in the long run to assist industry in better controlling the quality of its products, reducing waste through material salvage, analyzing production costs, making market surveys and increasing labor efficiency through improved lighting, noise abatement, in-plant training programs and better work flow.

Labor and Vocational Education

Finally, it should not be overlooked that a contented, well-trained labor force is of the utmost importance to industrial development. An improvement in working conditions and more attention to the welfare of the worker would tend to increase labor productivity. Such an improvement can to a large extent be brought about only through a growing realization among employers that it is to their own interest. The government should, of course, lay down minimum standards in this respect, particularly since the absence of real trade unions precludes workers from achieving

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423 471 individuals, however, under conditions which are virtually indistinguishable from full private ownership, since the holdings may be sold, mortgaged or transferred to successors. In the past, claims to land were established in most cases quite informally without the benefit of full legal sanction, i.e., by simply occupying the land. Tribal lands were generally regarded as being held in common. As, however, the tribes were converted from nomadic pursuits to settled agriculture, the sheikhs and sub-sheikhs of the tribe gradually established a claim to such lands as their own property and thus became landlords, with their tribesmen as sharecropping tenants.

423 In the 19th century the Turkish government sought to establish a single legal system of tenure, known as *tapu*, but in the end this effort only compounded the confusion. There were no systematic grants of *tapu* tenure. Grants were generally made without any examination of conflicting claims and were used as a means of rewarding the favored few. The grants that were made at that time to the Sadun clan and a few other influential persons in Muntafiq province remain contested to this day by the actual occupiers of the land. With the introduction of *tapu* tenure many village areas in the North apparently were registered in whole or in part as the personal possession of local notables or *aghas* who in the past had acted as tax farmers and served generally as intermediaries between the government and the cultivators. In the twentieth century a further complication was added by the rapid introduction of pump irrigation. City merchants financially able to buy pumps entered into arrangements with occupiers of *miri* land for the supply of water against specified shares in the crop, thus creating new claims to land without resolving the fate of any pre-existing claims.

423 54 Following a study of this question by Sir Ernest Dowson, a British land expert, the government decided in 1932 to end the confusion by inaugurating a cadastral survey to be carried out by a number of so-called Land Settlement Committees. The law of 1932 as well as the law which replaced it in 1938 recognized the following types of land tenure:

— *Mamloukah* or *mulk*—land held in absolute private ownership.
Matroukah—land reserved for public purposes.
Mawquja or *waqf*—land which is administered in trust (1) for

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the benefit of religious institutions by the state Awqaf Administration, or (2) for the benefit of private persons by *mutawallis* appointed by religious courts. This type of *waqf* must be distinguished from so-called untrue *waqf*, namely property from which the taxes or revenue were in the past assigned to religious institutions by the Turkish government.

Miri tapu—land held in permanent tenure from the state under conditions enabling the holder to sell or mortgage it and leave it to his successors. Proof of such tenure may be supplied by documentary evidence or by factual evidence that the land has been used productively by the holder or his predecessor for 10 years during which no land rent was paid or that it has been planted with trees meeting specified conditions.

Miri lazmah—land held under generally the same conditions as *miri tapu*, but with the stipulation that the government may veto the transfer of such land if it tends to disturb the peace, a precaution designed to prevent, where necessary, the transfer of tribal lands to people outside the tribe. *Lazmah* grants are made upon proof that a person has made productive use of the land within the preceding 15 years.

Miri sirf—land, particularly vacant or idle land, definitely acknowledged as belonging de facto and de jure to the state.

Although *tapu* and *lazmah* land are still recognized as *miri* or state land, they are in fact hardly distinguishable from full private ownership. In theory, possession of these lands may lapse if they are not productively used for three successive years in the case of *lazmah* and for four years in the case of *tapu*, but this apparently happens rarely, if at all. Prior to 1939 holders of such land were generally required to make to the state a payment for rent and water rights which was lower for *tapu* than for *lazmah* land, but in that year these assessments were abolished in return for amortization of their capitalized value over a period of 10 years. With the abolition of these payments there now remains very little distinction between *tapu* and *lazmah*.

The cadastral survey has now been completed for about half of the land in the 14 provinces in Iraq. The progress achieved is set forth in the table below. It will be noted that 61 percent of the total land surveyed and 51 percent of the cultivable land sur-

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TABLE 3

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LAND CLASSIFIED ACCORDING TO TYPES OF TENURE BY CADASTRAL SURVEY*
(in donums)

	Cultivable	Uncultivable	Total
Total area to be classified	—	—	107,045,725
Total area classified by Feb. 8, 1951	38,188,575	12,268,459	50,457,034
Mamlukah (mulk)	150,601	22,366	172,967
Matroukah	9,296	1,686,912	1,696,208
Mawqufa (waqf)	549,198	36,538	585,736
Miri tapu	8,370,595	698,987	9,069,582
Miri lazma	7,371,720	485,291	7,857,011
Miri sirf	21,737,165	9,338,365	31,075,530

* For fuller details, see Table I in the appendix.

veyed has been definitely adjudged to be *miri sirf*. Only a small part of the land is actually being exploited today. About 1.6 million donums is let by the state on triennial leaseholds which may be renewed once by the same holder. Virtually all of the land in Amara province is also leased out by the state. Here, however, it is held under virtually permanent leaseholds by sheikhs who have been rewarded by rather large tracts of land in return for maintaining order and performing other services in this province which has a somewhat unruly past.[2] The remainder of cultivable *miri sirf* land is in theory still available for exploitation. Presumably most of the better and more accessible lands have been alienated to private holders, and that remaining to the state is in large part relatively poor, inaccessible, or not susceptible of irrigation. Nevertheless, there is undoubtedly a large reservoir of state land which can still be opened to cultivation, particularly if irrigation is provided.

425 A feature of the 1932 law inaugurating the cadastral survey was the introduction of *lazmah* tenure. This type of tenure was designed to recognize prescriptive rights to tribal lands. In practice, the sheikhs rather than the tribesmen have benefited from this provision of the law. *Lazmah* grants could be obtained on proof

[2] In all there are 290 leaseholds of cultivated state land in Amara of which 13 are between 10,000 and 35,000 donums, 10 between 5,000 and 10,000 donums and 95 between 1,000 and 5,000 donums.

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TABLE 15

MERCHANDISE TRADE
(in millions of dinars)

	1949		1950	
	Exports	Imports	Exports	Imports
Customs returns	12.4	40.5	22.0	37.6
Less				
Oil Companies trade	− 0.7	−10.3	− 0.8	− 8.4
"Officially" financed	−14.9	−20.0	−20.6	−24.8
Discrepancy	− 3.2	10.2	0.6	4.4

Agents). But the principal explanation of the large amount of residual imports is the import of goods "without foreign exchange." Licenses issued (but not necessarily used) amounted to ID 10,800,000 and 7,400,000 in 1949 and 1950. These were paid for with foreign exchange acquired by the methods already described. Part of this foreign exchange was, no doubt, also used for travel abroad, particularly in the Lebanon. Insofar as receipts and expenditures in "unofficial" foreign exchange did not balance in any one year, there must have been a balancing item in these transactions, representing capital export or import. No data is available on this, but it is generally believed that there has been a considerable export of capital in recent years.

IX. Government and the Economy

Until recently the goverment, handicapped primarily by a shortage of funds, played a comparatively modest role in promoting economic life. In agriculture the main effort was confined to the production and distribution of seeds, the promotion of cotton and citrus culture and the combating of diseases and pests, particularly the locusts. Some help was given through the establishment of the Agricultural Bank and of a government organization for the rental of agricultural machinery. One project for the settlement of smallholders on newly irrigated government land in the Dujaila district near Kut was initiated. Outlays on irrigation and flood control,

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however, had to be kept small. In the field of industry the government sought to stimulate private enterprise by according special tax benefits and protection and by establishing the Industrial Bank.

The Development Board

With the prospect of a rapid rise in oil production and therefore in government oil revenues, the promise of a much wider field of activity developed. Accordingly a law was enacted in 1950 establishing a Development Board and assigning to it all the oil revenues as well as the proceeds of any loans contracted by it or by the government on its behalf. The Board consists of two ex officio members—the Prime Minister, who functions as its president, and the Minister of Finance—and six executive members appointed for five years. The Board was directed to draw up a general program for the development of Iraq and, upon its approval by Parliament, to proceed with the detailed plans and specifications of the projects included in the program and with their execution in accordance with an approved order of priorities. Each year any revisions in the program, an annual budget and an annual report are to be presented to the Parliament. The Board is also to consider and coordinate development schemes which may originate in the various ministries of the government.

The establishment of this Board is evidence of the government's determination to see the extraordinary oil revenues used for developing the country's resources and raising the standard of living and to insure some continuity in development which frequent changes in governments have made virtually impossible in the past.

The Board was constituted and began operations toward the end of 1950. The British and American governments each nominated one of the executive members in accordance with a request by Iraq. In the spring of 1951 the Board submitted its preliminary over-all program involving a total outlay of ID 65,674,000 over a five-year period beginning with the fiscal year 1951-52. About ID 29,401,000 of the Board's projected revenues, consisting of the income from oil anticipated at that time and nearly all of the proceeds of the $12.8 million loan obtained from the International Bank for the Wadi Tharthar flood control project, were reserved

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for subsequent programming. Expenditures for the five-year period were allocated by broad fields as follows (in dinars):[5]

Water storage and irrigation schemes	30,044,000
Roads	15,826,000
Buildings, including hospitals and schools	12,618,000
Miscellaneous projects	6,216,000
Administrative expenditures	970,000
Unprogrammed reserve	29,401,000

Because of the brief time devoted to its preparation, this program will necessarily undergo modification as more detailed study is given to requirements and the cost of individual projects and as some of the over-all allocations are programmed in detail.

The magnitude of this projected outlay is in startling contrast to the financial stringency which has characterized public expenditures in the past. The government has had great difficulty in making both ends meet. Severe economy has been the rule. Development outlays were pared; government salaries were not increased despite the increasing cost of living; and local administration was starved of funds.

Government Budgets

The trend of government finances is indicated in Table 16. It will be noted that, despite economies and tax increases, the government's total budget showed substantial deficit in 1948-49 and 1949-50, primarily because of the bad harvests in 1947 and 1948 and the effects of the war with Israel. Of the government's principal autonomous enterprises, the railways also ran considerable deficits on capital account which were defrayed only by using reserve funds, by borrowing ID 1,000,000 from the government and contracting a loan of ID 3,000,000 through the Export Credits Guaranty Department of the British Government. The Iraqi government borrowed at home to meet its own needs, its domestic debt rising from ID 4,500,000 on March 31, 1948, to ID 10,800,000 on March 31, 1951. Borrowing had to be limited, however, because the market for government securities was virtually restricted to the banking system. As of March 31, 1951, the National Bank and the commercial banks held ID 9,200,000 of the domestic debt.

[5] For a more detailed breakdown, see Table V in Appendix.

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TABLE IV

Expenditures Projected by the Development Board

(in millions of dinars)

	1951-52	1952-53	1953-54	1954-55	1955-56	Total
Irrigation projects:						
Wadi Tharthar	1.3	3.6	3.1	1.5	0.2	9.6
Habbaniya	0.5	0.5	0.5	0.7	—	2.1
Diyala Reservoir	0.2	0.7	1.1	2.2	1.9	6.1
Dokan Reservoir	0.2	0.7	1.0	1.8	2.0	5.7
General drainage	0.3	0.3	0.5	0.5	0.5	2.0
Other irrigation projects:						
New projects	0.4	0.9	1.2	0.9	0.9	4.2
Completion of projects begun previously	0.3	—	—	—	—	0.3
Total	3.0	6.6	7.4	7.5	5.5	30.0
Roads and bridges:						
Main roads across Iraq from south to north (Basra - Baghdad, Kirkuk, etc.)	0.8	1.3	1.5	1.5	1.5	6.6
Other roads	1.3	2.1	2.1	2.0	1.9	9.4
Total	2.1	3.4	3.6	3.5	3.5	15.9
Buildings:						
Hospitals	0.7	0.7	0.7	0.8	0.9	3.8
Schools	0.7	0.7	0.7	0.8	0.9	3.8
Other buildings	1.0	0.9	1.1	1.1	1.1	5.0
Total	2.4	2.3	2.5	2.7	2.9	12.6
Other projects:						
Small settlement projects	0.2	0.3	0.3	0.3	0.3	1.2
Artesian wells and water for drinking purposes	0.2	0.3	0.3	0.3	0.3	1.2
Special projects in northern Iraq	0.3	0.3	0.3	0.3	0.3	1.3
Reforestation and filling of swamps and marshes	0.1	0.1	0.1	0.1	0.1	0.5
Telegraphs & telephones	0.5	—	—	—	—	0.5
Other projects	0.2	0.1	0.1	—	—	0.4
Expropriations	0.3	0.3	0.3	0.3	—	1.1
Total	1.7	1.2	1.2	1.1	0.9	6.2
Administrative expenses	0.2	0.2	0.2	0.2	0.2	1.0
Grand Total	9.4	13.7	14.8	15.0	12.8	65.7

Note: Totals do not necessarily add up because of rounding.

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Dates

Dates, one of the principal foods of Iraq, are also a main export crop. While Iraq's pre-eminence in the world date market will not easily be threatened, the quality of dates has apparently declined and replacement of old trees has been far from adequate. Not more than 15 percent of the old gardens have under way a tree-planting program sufficient to replace old and deteriorating stands. More than 60 percent of the gardens are in poor condition owing to inadequate cultivation. Halfa, Johnson and Bermuda grasses have been allowed to become serious pests, causing considerable damage. Yields could be improved by better cultivation, manuring, fertilization, reduction of other fruit trees planted in date gardens and improvement in irrigation through the cleaning of canals and the installation of more pumps. Processing of the crop could also be improved, for old packing sheds where primitive methods of handling are employed are still in use.

Responsibility for promotion and improvement of the date industry is entrusted to the Date Association under a law approved in 1935. Ever since 1939 the Association has had a contract with the Andrew Weir Company whereby the latter undertakes to buy at fixed prices and export all the dates of the best varieties offered for sale from the Basra district. There is general agreement among the growers that this arrangement has helped to stabilize prices. On the expiration of the current contract with Andrew Weir after the 1952 season, the Association hopes to conclude a similar agreement with a newly-formed Iraqi company. The Association, the growers and the foreign companies engaged in the date trade are each expected to subscribe one third of this company's capital of ID 500,000. Consideration is also being given to extending its price-support operations to the dates grown in the Tigris-Euphrates valley. In addition, the Date Association is contemplating a distillery to convert into alcohol dates which are surplus to market needs.

There is considerable danger that in carrying out these ambitious plans the Association will neglect the need for better cultural practices stressed above. The Association has already been criticized for doing little to improve the production of dates. It would be unfortunate if it followed the precedent set by the Tobacco

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654 Monopoly which seems to have lost sight of one of its primary
245 objectives, namely, to raise the quality of tobacco. Moreover, before the Association and its Iraqi "marketing" company undertake the contemplated stabilization program, there must be reasonable assurance that prices are not fixed at excessively high levels owing to political pressures and that the company has ample financial resources. An operation of this character is likely to be highly speculative. While large profits may be earned in some years, severe losses will be incurred in others. With respect to the projected alcohol plant, caution should also be exercised. There is already one distillery making alcohol as well as arak. For the time being the demands for alcohol may make another plant appear attractive, but it is doubtful that in the long run dates can compete with other raw materials such as molasses as an economical source of alcohol.

Other Fruits

245 Iraq can grow a wide variety of fruits and nuts. Citrus fruit has been conspicuously successful in the Diyala River Valley and the number of plantings has increased greatly with the help of the Department of Agriculture which distributes the trees. A higher output could be achieved through the use of fertilizers, particularly nitrogen, and by better cultivation to discourage weeds and pests. Better storage facilities are also needed.

In some parts of the country, particularly in the North, conditions are quite favorable to the growing of deciduous fruits. The fruit, however, is poor in quality and seldom gets beyond local markets. The better grades of fruit are all imported from other Middle Eastern countries. Yet better care in pruning, cultivation, thinning and in the control of insects and diseases might well double the output of apricots, peaches and apples and greatly improve their quality. A rising standard of living should provide an incentive to higher production provided facilities are made available to can, dry and store the fruit. The proposed small-business section of the Industrial Bank might investigate the possibility of financing such facilities. The organization of transport to the market also requires attention.

Nut culture could also be expanded in the northern provinces. The possibility of top-working, budding or grafting improved

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and nursery stock. The first of these sections should have adequate laboratory facilities for identifying plants, insects and diseases and for analyzing chemicals, pesticides, fertilizers, feed and food products. The second section would need better equipment than is now available at Abu Ghuraib to test, clean and process seed. It would also require at least three nurseries—one each for the northern, central and southern parts of Iraq—to propagate needed fruit, nut and citrus stocks. Seed stocks of proven strains would have to be either imported or produced locally either on government farms or on private farms under contract. Experience indicates that soil and climatic conditions are favorable to the production of seed of the most important field crops, as well as alfalfa, berseem clover and many of the grasses.

The inspection and regulatory service in the field will presumably exist separately for agriculture and animal husbandry under the direction of the departments respectively responsible for these subjects at Baghdad. Ultimately, however, the extension service should be under the unified direction of a single director, particularly since it is so desirable in the future to integrate animal husbandry with agriculture.

Establishment of a Research Department

An extension service will need to be complemented by a staff engaged in practical research and experimental work and a small staff of agricultural statisticians and economists. The first will develop and test new and better strains of seeds and stock, experiment with different methods of soil cultivation and fertilization, explore means of improving livestock breeding and feeding, and the like in order to develop the most effective and best adapted agricultural and livestock practices for practical application through the extension service. The small staff of statisticians and economists will be concerned with developing a more accurate picture concerning farm and livestock production and land use. It will study marketing problems and provide advice on the pattern of agricultural and animal output that is likely to be most remunerative for the farmer in various sections of the country.

It is important that a Department of Research and Experimentation be established within the ministry charged with respon-

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sibility for agriculture. Such a department should gradually be staffed over the next five years with trained personnel able to devote full time to research and experimentation. At present those engaged in research are generally charged with other duties as well. Until more staff can be trained, the available personnel will presumably have to discharge several functions. It is strongly recommended, however, that immediate steps be taken to recruit a man with wide experience in research as the director of the new service. It would be his responsibility to coordinate such research as is now being carried on both in agriculture and animal husbandry and to build up a full-time staff. The research department should have ample facilities and therefore have jurisdiction over all experiment stations. Government farms are now primarily devoted to commercial production of seed and nursery stock rather than to research. In the future their principal task should be to serve as experimental and demonstration stations. Only such land as is surplus to these needs should be turned over to commercial seed or stock production. Under those circumstances part of the seed production may have to be contracted out or grown on newly established government farms.

The research department would concentrate on the following fields:

1. *Soil management and conservation.* This would include the initiation of a complete soil survey to determine the properties of different soils by field and laboratory studies, classify the soils by their properties and possible uses and summarize the information available on each type with respect to its tilth, fertility, adaptability to particular crops and the like. Such a survey would be extremely useful in planning land use, especially in the selection of land for irrigation and drainage projects. The first step would be to carry out a preliminary reconnaissance survey. The advantages of the intensive cropping system, involving proper crop rotation and the use of fertilizer, should also be studied in comparison with those of the crop-fallow system. Finally, the various methods of conserving moisture through better cultivation, timely destruction of weeds and the prevention of soil erosion could be tested.
2. *Introduction of new and better varieties of crops.* Among the subjects to be examined in this field would be the suitability of different types of forage crops, including

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grasses and legumes; new grain sorghum varieties and hybrid maize strains; and the adaptability of sugar beets and sugar cane.

3. *Horticulture.* This work, which should be centered at the Zafarania station, would cover vegetables, dates, nuts, citrus and other fruits. Tests should be carried out in the northern and southern as well as the central part of Iraq.
4. *Tools and machinery.* This type of work would test the suitability of various kinds of hand, animal-drawn and power tools for different conditions and jobs and especially seek to develop cheap but effective animal-drawn equipment and hand tools.
5. *Forestry.* Research on forestry should be developed with particular attention to experiments with controlled grazing on range and forest land and the selection and culture of trees suitable for various uses and sections of the country. It would be desirable to carry on this research not only at the forest nursery in Erbil, but also at the Abu Ghuraib and Bakrajo stations.
6. *Animal husbandry.* This would focus on the development of the most suitable pasture and feed crops and the best methods of preserving fodder for winter feeding. As already indicated, it would determine to what extent existing types of livestock could be improved by systematic breeding and feeding. The cost and results of feeding with different oilseed by-products and date by-products should be studied and a laboratory established to work on the relative value and digestibility of various feedstuffs. A research program on range development should also be carried out, but jointly with the forestry service. The government has already taken a constructive step by inaugurating a scheme near Chemchemal in the province of Kirkuk for experimenting with afforestation and rotational grazing. The site appears to be unsuited, however, for the production of low-priced fodder to aid in overwintering cattle. Experiments should also be conducted with the reseeding of pastures, using both foreign and indigenous grasses and clovers and with the possible use of fodder trees such as mesquites.

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423 for settlement by small-holders, they will make a significant contribution to the social and political stability of Iraq. They may make any strong demand for radical land reform unlikely in the areas now already under cultivation. If developed with the enlightened guidance of the government, the new settlements may ultimately furnish striking demonstrations of the value of more advanced techniques in agriculture and animal husbandry as well as in social organization.

654 423 Under a law approved by the Parliament in 1951 land recognized as government-owned *(miri sirf)* in the cadastral survey will apparently be reserved in the main for settlement by small-holders. However, land which can only be irrigated by high-lift pumps can still be granted in tracts up to 5,000 donums to individual holders. Projects for the development of *miri sirf* land are to be drawn up and carried out by the Development Board. Selection of the settlers and administration of the finished projects will be the responsibility of a committee headed by an official with the status of a Director General. Two or three other members will be appointed by the Council of Ministers. The area of each project will be a minimum of 2,000 donums in mountainous lands, 20,000 donums in flow-irrigated lands and 80,000 donums in the rain-fed region. Each settler will be assigned up to 20 donums in the mountainous areas, 100 donums in flow-irrigated areas, 200 donums in pump-irrigated and 400 donums in rain-fed lands.

Under the law every settler must agree to refrain from granting his rights in the land to others and from injuring his fellow settlers in any way, to follow the committee's instructions with respect to the cultivation of the land and the planting of a garden, and to build a house in accordance with plans prepared by the [425] committee. If he fulfills this agreement, he receives title to his allotment after 10 years without payment. For a further period of 10 years he has no right to alienate it or mortgage it except to the Agricultural Bank.

The law does not confine the distribution of land to qualified and experienced farmers. In fact, it specifies that up to 20 percent of the land in each project shall be distributed to retired army and police officers, soldiers and policemen who have served at least four years, and graduates of agricultural schools, provided the

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committee is convinced of "their agricultural capabilities". Under the same condition the committee is also to distribute up to 25 percent of the land to retired civil servants who have served at least eight years and to unemployed graduates of elementary, secondary and religious schools.

While the general intent of this law will meet with general endorsement, several of its provisions might well be reconsidered. First of all, it appears doubtful that the inclusion of the beneficiaries described in the preceding paragraph will advance the basic purpose of the law—namely, to establish a class of independent small farmers who till their own land. Most of these types of beneficiaries will have neither the ability nor the inclination to do the actual farming themselves. They will bring in others to do their work and may even become absentee landlords. Under such circumstances the evils of "petty landlordism" will tend to creep in.

Secondly, the size of the plots to be assigned to each settler seems in some cases to be too large. Fundamentally the allotment should not be bigger than that which can be managed by the average farm family without outside assistance. The size will, of course, depend on the machinery, tools and draft animals which can be placed at the settler's disposal from the very beginning. It is improbable, however, that a single family will be able to handle more than 100 donums. If a larger allotment is necessary in the rain-fed zone in view of the uncertain yields resulting from irregular rainfall, a special effort may have to be made to organize cooperatives to own and operate the machinery needed to till such units. The proposed assignment of 200 donums in pump-irrigated areas is presumably based on the assumption that some private person will provide the needed pumps against a substantial share in the crop, thus requiring each farmer to have a larger plot of land for a decent livelihood. Now that the government is likely to have ample financial means, there would seem to be no reason why it cannot either install and operate the pumping facilities itself for a nominal charge or finance the cooperative ownership and operation of such pumps.

Thirdly, the provision enabling settlers to acquire land without any payment whatsoever is open to question. In principle it is inequitable that no payment should be required for these exten-

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654 423 sive benefits, particularly in relationship to those who are not fortunate enough to be selected as beneficiaries. Moreover, the value of the benefits conferred may be all the more appreciated if some charge, which need not be burdensome, is made for them.

Fourthly, it may be desirable to reconsider the provision exempting the areas irrigated by high-lift pumps from distribution in accordance with the law. Apparently this provision was also dictated by the belief that the requisite pumping facilities would need to be provided by private investment and that such investment was unlikely to be forthcoming unless a comparatively large grant of land was made for development by high-lift pumping. In the future, however, public capital should be made available for the installation of such pumping facilities.

Finally, the safeguards against alienation of the land may need further strengthening. After the two consecutive periods of 10 years each, during which these safeguards would apply, it may still be desirable for the government to retain an option to purchase any of such land offered for sale. In this way it would be possible to prevent, if necessary, the gradual acquisition of excessively large landholdings in these newly developed areas.

A brief comment might be made regarding the settlement possibilities in the rain-fed zone. Much of the land available for such settlement may be submarginal from the standpoint of rainfall. Care must be taken, therefore, not to invest too much in the development of the lands the yield of which will be highly speculative. It is noted that the Department of Agriculture has drawn up an ambitious scheme involving the settlement of 1,000,000 donums and the establishment of 50 villages in northwestern Mosul near Balad Sinjar. There are indications, however, that the rainfall in this region may be insufficient to permit settlers to earn a good livelihood. If attempts are made to carry out this scheme, it is suggested that small-scale tests first be undertaken over a number of years.

654 423 241 166 The law for the development of *miri sirf* lands which has been discussed at length above is basically modelled on the 1945 act under which the Dujaila settlement was established in south-central Iraq near Kut. During the period 1946 to 1950, 1,058 farmers were settled in this area on 100 donum plots allotted from

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state-owned agricultural land. The system of cultivation is prescribed. Thus 40 donums must be devoted to winter wheat and barley and five donums to summer crops. In addition five donums are to be planted with fruit, although evidently only 350 of the older settlers have such gardens in which grapes, greengage, apricots and date palms have been planted.

On the whole, the Dujaila scheme has been conspicuously successful. There is no doubt that the settlers who formerly were poor sharecroppers are now far more prosperous and contented. Most of them are obviously proud of their accomplishments. Their mud houses, although not built according to standard specifications as originally planned, are larger and more substantial than those of other fellahin. As already indicated, interesting experiments with cooperative organization have been carried out. In addition a useful start has been made with the planting of trees along roads and boundary lines.

The Dujaila venture has not, however, been an unqualified success. The failure to install drainage facilities has led to progressive salination and already some of the land has been abandoned. The administrative staff on the spot totals 75 people. Even after allowing for the fact that the staff also controls the distribution of water within the scheme and the operation of two nurseries, this number seems excessive. Aside from insisting that five donums be planted to fruit trees, nothing has been done to improve agricultural and livestock practices. Thus the increased prosperity of the farmers is solely due to the fact that they have more land to till and do not have to surrender a share of their crops to a landlord. There is no agricultural extension service on the spot capable of working with the farmers. In fact, the Department of Agriculture is not even represented on the committee which directs the scheme. Two nurseries are located in the scheme, but they serve simply to supply fruit trees for garden plots and other trees and cannot in any sense be considered demonstration units. It is generally agreed also that the scattered mode of settling the people was ill-advised, since it ignored the need for a community life and made it difficult to provide such community facilities as safe water, schools and health centers.

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On the new settlements the government will have a unique opportunity to improve on the Dujaila project. To ensure that it becomes a model project, the planning of each settlement should be carried out in close cooperation with the Ministry of Social Affairs, the Ministry of Public Works, the Ministry of Education and the Ministry charged with agriculture. There must be an integrated plan with appropriate provision for public health, schools and adult education, agricultural extension, cooperatives and the like.

XIV. Establishment of a Ministry of Agriculture and Land Use

The program outlined in this monograph does not involve large expenditures. Detailed estimates of the cost involved will need to be worked out, but it is unlikely that total expenditures over the next five years will be far from ID 7,500,000. The largest outlays—ID 2,900,000 and ID 1,450,000 respectively—would probably be for grain storage facilities and additional capital for the Agricultural Bank. Not much more than ID 250,000 may be needed for new tobacco warehouses. The continuing contribution to the Agricultural Machinery Administration has been assessed at ID 250,000, but more money would be required if plans to borrow from the International Bank for new equipment do not materialize. On forestry, probably not more than ID 750,000 could be spent in the initial five-year period. An arbitrary allowance of ID 500,000 might be made for financial incentives. The remainder of the total outlay would, however, really be the most important, for it would go, except for some miscellaneous projects, to expand and strengthen the agricultural and animal husbandry services which are vital to the future of Iraq.

The improvement of agriculture, animal husbandry, and forestry along the lines indicated requires an energetic organizational effort by an agency well staffed and vigorously directed. Within the existing governmental organization in Iraq, agriculture and animal husbandry are not given sufficient importance. These subjects should not be handled by subordinate departments in the Ministry of Economics but by a separate Ministry of Agriculture and Land Use.

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ANNEX D

INDUSTRY

I. Iraq's Potential for Industrial Development

The economy of Iraq is predominantly agricultural. In recent years, however, a national desire for industrialization has become increasingly evident and is being actively encouraged by the government. In 1929, the government took the first step to assist industry by passing a statute known as "A Law for the Encouragement of Industry". It proved to be of little significance, however, as it failed to provide industry with any financial assistance. It was not until seventeen years later, when the government created the Industrial Bank, that the problem of obtaining the necessary capital was partially solved. As a result, industry has since made some noticeable strides and should continue to do so.

On the whole, however, industry is as yet little developed. Excluding the petroleum industry, modern industrial plants employ only 2,000 people and account for a total capital investment of only about ID 4,000,000 and an annual gross income of roughly ID 3,000,000. The very modern and important oil industry, on the other hand, provides employment for about 12,000 people. During the war a number of important industrial enterprises were started. Rising prices and difficulties in getting materials, however, retarded orderly progress, so that some of these new projects are still in the process of completion.

Natural Resources

There are ample resources for further industrial development. An abundance of oil and gas provides a cheap source of both fuel and raw material. Particularly as irrigation is extended, agriculture will become increasingly important as a source of raw materials such as cotton, sesame, linseed, and possibly sugar beets or sugar cane, soybeans and jute.

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paid in only ID 600,000 out of an authorized capital of ID 1,000, 652
000. Its resources have to some extent been supplemented by 433
borrowing ID 100,000 and ID 200,000 respectively from the Awqaf Administration and the National Bank. The Mission suggests, therefore, that the Development Board gradually supply the funds necessary to increase the Bank's capital by ID 5,000,000. The Bank would be authorized to use this sum for making loans to, and investments in, industry within the framework of an over-all program approved by the Development Board.

The Bank's capital should be used primarily as a revolving fund. The Bank should generally dispose of its industrial shares whenever an enterprise becomes profitable and, therefore, capable of attracting more private capital. Profit-making assets should be kept only to the extent necessary to create a reserve against possible losses. While the Bank should presumably show a small profit to inspire confidence in its operations, it should not retain its participation in profit-making enterprises for the sake of maximizing its profits, particularly when this limits its ability to assist other industries.

The Bank at present is understaffed. The directors pass on projects without the benefit of expert assistance, and, as a result, some phases of a project may be completely overlooked. With a shortage of staff, the transaction of business with the Bank is also time-consuming and thus discourages applicants.

The Mission recommends that, first, the Bank's staff be both increased and strengthened and, second, that it be reorganized to give greater responsibility to the head of the Industrial Schemes Section who should be a properly qualified man with broad industrial experience. Members of the Industrial Schemes Section should have thorough training and practical experience in power and mechanical engineering with special reference to industrial planning and layout, and in operations, management and control of industry with special reference to cost accounting.

Protection of Industry

The "Law for the Encouragement of Industry" enacted in 651
1929 was replaced by new legislation in 1950 which grants limited 433
exemptions from income and surtaxes for four years; exemptions 651

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from import duties on machinery, material, equipment and spare parts; exemptions from property tax for 10 years; and use of rent-free government land not in excess of 25,000 square meters for a period of 10 years. Iraq-owned industrial enterprises can qualify for these benefits as long as they primarily use raw materials available in Iraq or produce goods imported in considerable quantities. Neither of these conditions is necessarily relevant to efficient production; and it is therefore suggested that the law be amended to stipulate that such benefits should be accorded only to enterprises which have a reasonable prospect of becoming efficient enough to withstand foreign competition.

Industry is protected in many cases by high import duties and in some cases, such as cotton yarn, beer and cement, by import prohibitions. Industrial enterprises have not so far taken full advantage of these restrictions, but if they should do so the demand for their products would undoubtedly diminish significantly.

Foreign competition is always a useful check on inefficiency. Its beneficial effects in bringing about lower production costs and a better product have been demonstrated many times in Iraq. For example, even industries protected by high tariffs have been forced to modernize in order to reduce costs and meet competition. To attempt to shut out foreign competition will, in general, retard, rather than foster, industrial growth. In some cases, it is true, new industries may need protection during the early years of operation. Protection should not, however, be allowed to become a permanent shield for inefficiency; as experience is acquired and production costs are stabilized, protective measures should be greatly reduced.

In a country like Iraq where the limited market affords opportunities for only one or two plants in certain fields, there is an acute danger of monopoly and attendant high prices. This danger is aggravated further by a tendency in some industries to emphasize limited production with high profits per unit rather than mass production with lower unit-profits. Foreign competition would appear to be the proper means of restraining trends toward monopoly within a particular field, just as it operates to stimulate modernization in plants suffering from high costs because of obsolete methods.

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in economics and finance capable of acting as company secretaries or as economic and financial experts in business or government. Greater emphasis should be placed on practical training; the teaching staff should be strengthened; and more attention should be paid to banking and accounting, particularly cost accounting. Advisory committees consisting of representatives of leading banks and business houses should be appointed to both the College and the secondary school to review the curriculum. They could assist in arranging for part-time apprenticeship training and would provide a means for checking how well graduates of these institutions measure up to the requirements of business.

Effective Government Organization for Industry

Government activities relating to industry, except for the Industrial Bank, are now handled by a Department of Industry in the Ministry of Economics. This Department under its present director concentrates primarily on research and laboratory work and is not equipped to analyze and record the commercial and economic operations of industry. As industry expands both types of activity will become increasingly important. The Mission therefore recommends a realignment of the present organization to provide for two separate departments within the Ministry, a Department of Industrial Research and Standards and a Department of Industries. Research and technical functions now being carried on would be continued under the Department of Industrial Research and Standards. Its facilities need, however, to be expanded to meet industry's growing requirements for laboratory testing and quality control.

The newly organized Department of Industries would carry on economic research and analysis. Among its functions would be the maintenance of adequate statistical records of industrial production, the analysis of economic problems relating to industry such as marketing, and the administration of the laws providing special protection to industry.

Both departments should gradually be equipped to give increasing assistance to industry in improving its output and reducing its cost of production. This type of assistance should be stressed more and more in the future, as compared to special mea-

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sures of production and assistance which tend to shield industry against competition. There is much to be done to help industry to achieve better control of the quality of its products, in reducing waste through material salvage, in analyzing production costs, in making market surveys and in raising labor efficiency through improved lighting, noise abatement, in-plant training programs and better work flow.

IV. Other Suggestions for the Improvement of Industry

Possibilities for Economies in the Use of Capital

Whenever the capital cost of a plant is an important determinant of production costs, it becomes essential to utilize the plant to the fullest extent. This may be accomplished, for example, by increasing the number of shifts, by extending the work week and by stepping up machines to their maximum economic speed. Completely integrated plants seldom if ever offer the opportunity for this type of operation, because certain machines are never called upon for continuous use. This is, of course, very noticeable where the plant does all its own maintenance work, even to all of its foundry items. The solution is obviously one of resorting to contracting or sub-contracting with concerns specializing in particular operations. For example, a single finishing and dyeing concern might advantageously serve two or more textile mills, where the capacity of these mills is insufficient to load separate finishing departments to their economic limit.

In Iraq there is a tendency in industry to generate its own power rather than to purchase it. This leads to the installation of expensive facilities which are utilized only part of the day. While industry is operating, many municipal power plants stand virtually idle because they serve primarily lighting needs and their peak load accordingly comes at night. In some cases, where large quantities of process steam are needed, industrial enterprises may be justified in generating their own power, but for the most part, the purchase of power is preferable. Unfortunately, power rates, except in Basra and Baghdad, are so high that the purchase of

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

206 Development Board which is responsible for coordinating the development program of the country as a whole. The Board should also provide the financial means but leave to the PTT responsibility for execution of communications projects.

IX. Pipelines

315 Inconspicuous, but most important, in Iraq's transport and communications systems are the oil pipelines. The existing lines are: a dual line, 12 inches and 16 inches, from the Kirkuk oilfields to Tripoli, the Lebanese Mediterranean port; a 12-inch line to Haifa in Israel, closed in 1948; and a new 30-inch line under construction between Kirkuk and the Syrian Mediterranean port of Banias. A short line runs from the Basra oilfields at Zubair to the shipping stage at Fao. The pipelines carry a tonnage of oil which far outstrips the total carried by the country's railways. They are operated, maintained and expanded by the oil companies, and need only be mentioned to complete the picture of Iraq's transport system.

X. Surveys

654 No development in any branch is possible without maps and surveys. The Directorate General of Surveys, which is under the Ministry of Communications and Public Works, has surveyed and mapped the southern part of the country aside from the desert to scales varying from 1:5,000 to 1:50,000. Few topographical surveys have been carried out in the rest of the country, and the existing maps are not very reliable. The education and training of competent surveyors is difficult. Terms of service are not attractive to young engineers and surveyors who find better prospects in engineering, planning and construction work. Air surveys can, to all practical purposes, solve the problem and progress with them is now being made in the North. The skilled surveyors who are available are at present employed in cadastral work, land settlement surveys and mapping to fix the demarcation of land ownership.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

It is expected that once this work is completed, the personnel problem will ease somewhat.

The development program of the service provides for a survey and mapping to a scale of 1:20,000 at an estimated cost of ID 200,000. For the appropriate housing of the service, a new building with 10,000 square meters of floor space is now under construction and is expected to be completed in January or February 1952. This will facilitate administration of the service which is now scattered in three widely separated buildings. The new building will also house the up-to-date printing plant ordered in Great Britain. Funds for building and plant have already been sanctioned. Air surveys now in progress should be continued at an annual cost of approximately ID 40,000.

XI. General Observations

Teamwork

Not only the development of the transport services but also the general development program, with all its implications of temporary and seasonal demands for transport of construction materials and imports of machinery and plant, will materially affect the tasks before the transport managements. The teamwork in the existing transport departments is exemplary. It is therefore emphatically urged that no change be made in the present organizations and their leading personnel until after the main development programs are completed.

Intermediary Staff

In all the transport services there is a great dearth of intermediary staff—foremen, inspectors, surveyors, supervisors, and the like—for whom practical training in workshops and on construction sites is far more important than school or college education. In all transport development projects, special courses should be provided to train adaptable Iraqi apprentices under skilled teachers in shops, factories and on tracks and roads in the country.

These observations apply to all forms of transport, port, railways, roads, airways and communications. Unless continuity is maintained with a gradual, cautious transfer of responsibility from foreign to Iraqi personnel, efficiency will be seriously jeopardized.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

XII. Projected Cost of Proposed Programs

The projects recommended for consideration are summarized below as to cost and time of realization. The total cost which the Development Board might have to defray over the next five years would be approximately ID 31,000,000.

TABLE 11

COST OF TRANSPORT AND COMMUNICATIONS PROGRAMS SUGGESTED FOR DEVELOPMENT BOARD FINANCING

Project	Costs (in dinars)	Period (years)
PORT		
New channel	2,000,000	4
INLAND WATER TRANSPORT		
Study of river training by experts	Token	2
RAILWAYS		
Baghdad Station commitment	143,000	1
Baghdad new layout, provisional	100,000	1
22 continuation and completion projects under way	213,770	1
labor quarters	341,000	4
Rehabilitation and modernization projects	500,000	5
Renewals including diesel traction	6,300,000[a]	5
Extra for gauge conversion (tentative)	6,000,000	6
ROADS		
Trunk road system	14,500,000	10
Secondary road system	4,000,000	5
Road transport control	Token	1
URBAN TRANSPORT		
Baghdad transport services, workshops, garages and vehicles	500,000	3
AIRPORTS		
Baghdad development	300,000	2
Basra development	[b]	2
AIRLINES		
Iraqi Airways	600,000	4
POST, TELEGRAPH, TELEPHONE, RADIO		
Telephone extensions and buildings (if not financed from Communications budget)	300,000	Annually
Auxiliary power plant for transmitter	30,000	1
SURVEYS AND MAPPING		
Air surveys	40,000	Annually

[a] On assumption of gauge conversion.
[b] To be financed by Port of Basra.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

743 women and children and one for mental dieases. A new tuberculosis hospital and sanitarium has just been opened in Baghdad. The Army, Railways, Port of Basra, Police, Ministry of Education, and the oil companies maintain their own hospitals. There is also an American Mission hospital.

While some hospitals are adequately equipped and staffed, many of them are seriously in need of repair and equipment, especially dental equipment. Most of the hospitals suffer from an acute shortage of trained subordinate staff (medical aides or nurses). Hygienic conditions in some leave much to be desired. Hospital administration appears to be weak throughout the country, with a few notable exceptions such as the Royal Hospital in Baghdad. This is the teaching hospital of the Royal Medical Faculty and has practically all modern medical facilities. Several Iraqi doctors are now attending a course on hospital administration in foreign countries, but so far the number attending these courses is small. It would be desirable to give such a course in Iraq to young doctors after qualifying.

Simple conditions are treated in dispensaries of which there are 448—403 of them government institutions—fairly evenly distributed throughout the country. The physical facilities and staffs of such dispensaries vary widely. Some are in the charge of a doctor but the majority are run by health officials and dressers. Except for vaccination against smallpox, the dispensaries do very little preventive medical work. Since there is only about one dispensary to every 12,000 of the population, it is obvious that the number must be increased as additional staff can be trained.

654 743 The Development Board has planned an annual expenditure of ID 700,000 on medical service buildings in its five-year program extending over the period 1951-52 to 1955-56. A detailed breakdown of this expenditure was available only for the first year. On the whole the total outlay envisaged over the entire period would seem adequate. In the first instance, however, efforts should be concentrated on the replacement, repair and modernization of existing hospitals. In addition to the projects of this nature for which provision was made in the first budget of the Development Board, the following would appear to be most urgent:

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Additional provision for reconstruction of the Karkh and Kut Hospitals	ID	200,000
Repairs to the Maude Hospital (Basra), Amara Hospital, Erbil Hospital and Suleimaniya Hospital		250,000
Infectious disease blocks for the Erbil and Mosul Hospitals		65,000
Maternity block for the Hilla Hospital		25,000
Laundry for Diwaniya Hospital		12,000
Additional wards for Mosul and Kirkuk Hospitals		80,000
Completion of Mental Diseases Hospital		250,000
Additional provision for operating facilities at Royal Hospital		50,000
Children's Ward at Royal Hospital		40,000
Maternity block at Royal Hospital		40,000
Dental equipment for hospitals		20,000
Total	ID	1,032,000

As it becomes possible to devote more attention to increasing facilities for treatment, priority should be given generally to the construction of additional dispensaries in the rural areas.

Doctors

At present there is about one practicing doctor to every 7,000 of the population, but many of the doctors are concentrated in Baghdad. Only about 35 doctors are now being registered annually, but with increased accommodations and more laboratory facilities, it will be possible to enroll more students so that at least 50 will qualify as doctors annually. This number may be sufficient for Iraq's needs, provided that an adequate number of suitably trained health officers are available for service in village dispensaries and that nurses and dressers receive more training.

Doctors receive their training at the Royal Faculty of Medicine, which was founded in 1927. The syllabus and teaching seem, on the whole, to be good. They emphasize adequately the study of the endemic diseases, although they do not give enough weight to the teaching of public health and preventive medicine. The recent appointment of a professor of public health should give a better balance to the program of instruction. Public health as such should probably be taught as a postgraduate course. It would include such subjects as public health administration, public he

2: United Nations U-4 (no date) 1950 M1 Middle East
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riya), and Sulaimaniya. The capital of Iraq is Baghdad, with a population of 552,047 inhabitants, according to the census of 19 November 1947. Baghdad, which is situated on the Tigris and is the terminus and junction of all the Iraqi railways, is an active centre of trade and traffic. Other large towns are Mosul (340,541 inhabitants), Basra (206,302), Amara (183,870), Karbala (149,710), Kirkuk (148,349), Nasiriya (110,934), Ramadi (110,684), and Baquba (94,482).

B. *General features of the economy*

Agriculture

Agriculture is the main resource of Iraq's economy. According to estimates, approximately 80 per cent of the population are engaged in it. The fertile land of Iraq, which was regarded as one of the granaries of the world in the time of Herodotus and which was carefully watered by a well-planned system of irrigation until the thirteenth century of our era, has since then fallen into a state of neglect. Agriculture began to receive attention again in 1921. As droughts, dust storms and plagues of insects (especially in the Mosul region) cause serious depredations, the government supervises the condition of the country's agriculture and stock-raising and takes the necessary measures for their rational development: it has set up experimental farms, which also produce good quality seeds for the use of farmers, and is encouraging the mechanizatio of agriculture.

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
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cent of Iraq's oil revenues. The cost of the initial programme of the Board, as approved by Parliament, covers the years 1951–6 and is estimated at ID155,374,000. It provides for studies and research and training of Iraqi engineers and technicians; an ambitious plan for irrigation and drainage, including a number of major projects; the construction of roads, bridges, hospitals and health institutes, schools, housing for labourers and officials and public buildings; land reclamation, afforestation, agricultural research, animal husbandry; development of water-supplies, health resorts, aerodromes; industrial and mining projects. The programme of the Development Board has taken account of the report[1] of the mission of the International Bank for Reconstruction and Development, which, at the request of the Government of Iraq, visited Iraq in 1951 to review the country's economic potentialities and assist the Government to formulate a long-term programme for the further development of productive resources.

By the end of 1953 measures had been taken towards the implementation of practically every item of this programme. Of the major projects, work on the Tharthar scheme for Tigris flood control was well in hand and its completion scheduled for March 1956. The Habbaniya scheme was sufficiently advanced to permit flood control of the Euphrates; work had already begun on the barrage, which would be completed at the end of 1955. Preliminary work was in progress for the construction of dams on the rivers Diala, Lesser Zab, and Greater Zab, and schemes were under investigation for drainage and water utilization in the south and the generation of hydro-electric power. The construction of a bitumen refinery at Qaiyara, south of Mosul, was imminent and designs were complete for cement plants at Mosul and Kirkuk and a cotton textile factory of an annual capacity of 25 million square yards in Mosul.

Agriculture

Iraq is predominantly an agricultural country. It is estimated that about 80 per cent of the population derives its living directly or indirectly from the soil and, apart from oil, exported products are almost entirely agricultural. Nevertheless only some 20 per cent of the total area of the country is cultivable, and only some 36 per cent of this is actually under cultivation. The cultivable area has two main divisions: first the region to the north and east of a line running south of Mosul and Kirkuk to Khanaqin, where the rainfall is sufficient to permit the cultivation of winter crops without irrigation; and second, the

[1] IBRD, *The Economic Development of Iraq* (Baltimore, John Hopkins Press, 1952).

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
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185 charcoal production with consequent encouragement of
137 secondary industries, and improve climatic conditions.
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Problems of Agriculture

185 Among the natural difficulties which attend agriculture in
654 Iraq are those imposed by drought, floods, dust storms, diseases, pests, and soil erosion, of which the first two are being attacked by a large-scale programme of irrigation and flood-control. The major diseases are the inflorescence rot of dates, wilt diseases of tomato and watermelon, gummosis of citrus, rusts of cereals, and various mildews. The major insect pests are the Morocean locust, whose ravages have from time to time caused immense damage to cereal crops, the grasshopper, the Mediterranean fruit fly, the date-fruit mite and Dubas bug, and the Sunn pest and bug *Aolia acuminata* which attack wheat and barley. The Ministry of Agriculture is combating these diseases and pests by modern methods; in locust-fighting Iraq is among the most advanced countries in the world. The problem of soil erosion can to some extent be met by the activities of the Forestry Department.

Irrigation

312 The aim of water-control in Iraq is to even out the seasonal flow in the two great rivers, Tigris and Euphrates, so as to prevent both drought and flooding in the irrigated areas and to increase the area under cultivation. Irrigation itself imposes the necessity of drainage, to prevent the salting up of irrigated land and the further spread of malaria.

Three methods of irrigation are employed: direct inundation at flood-time, which is used for rice cultivation and is of comparatively limited importance; distribution of water from rivers and canals by direct flow on to the land through a network of small channels and cuts; the lifting of water into the channels and cuts by various methods which include the use of mechanical pumps. The date-palm groves of the Shatt al-Arab benefit by natural irrigation; twice a day as the tide rises and falls fresh water is forced into the creeks and channels and then drains out again.

Irrigation—often highly organized—has been a feature of Iraqi agriculture since the Sumerian civilization, in decline since the seventh century, and especially since the thirteenth and fourteenth centuries. Serious reconstruction began in this century, with the Hindiya barrage, completed in 1913, for which the Euphrates was diverted, and the Kut barrage on the

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
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time, which, prolonged by primitive methods, may interfere with or even prevent autumn tillage and sowings. Because of the low density of population, an improvement in the water-supply of a given area in the irrigated zone usually causes a shift of population from less favoured areas, which consequently go out of cultivation. This tendency is greatly increased by the unstable nature of the rural population, a great part of which have settled to cultivation within the last century and have no lengthy attachment to their locality. Political circles are alive to the need for reform, and recently an attempt has been made to establish small-holders on lands newly introduced to irrigation (for example, on the Abu Ghuraid and Dujaila canals), and to establish co-operative organization. In 1951 a law was passed for the distribution of state land in parcels of varying size to selected settlers, up to 20 per cent of each area to be allocated to graduates of agricultural schools and former members of the police and army, and up to 25 per cent to civil pensioners and unemployed school graduates. An Agricultural and Industrial Bank, formed by the Government in 1936, contributes to the welfare of small landowners by providing cheap credits, though its resources are inadequate for the need.

Livestock

Raising livestock is of major importance both in the internal economy of the country, by providing food, transport and traction, and raw material for essential manufactures, and also in foreign trade. In the period 1948–50 livestock and their products—wool, hides and skins, intestines (casings)—accounted for about 13 per cent of Iraq's total exports excluding oil.

Most of the rural and much of the urban population depends to some extent on animal husbandry for a living, but methods have hitherto been mostly primitive and unsystematic, being semi-nomadic and divorced from crop-raising, with little attempt on the part of the owners to supplement natural feeding except in winter, or to improve the breed or combat disease. Quality and productivity are consequently low. The Government Department of Animal Husbandry, however, is experimenting to improve the breed of cattle, sheep, and mules and the Government controls the importation of animals to safeguard the native stock from diseases from which it is at present free, such as rinderpest and contagious pleuro-pneumonia. By irrigation, water conservation, and control of pasturage a more permanently settled system could be evolved, integrated more closely with the production of crops.

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511 of the people are even more primitive than their ancestors of several thousand years ago. They live on the ground in mud huts, in the shadows of the stone ruin of their ancestors' homes. They draw water by hand from wells from which water was once pulled by giant water wheels; they irrigate their tiny garden patches with hand scoops where once large canals watered thousands of acres.

871 212 Despite the progress in education, less than half the children are in school, and only half of those fortunate ones finish the primary grades. In the country as a whole, 80 per cent of the males and 95 per cent of the females are still illiterate.

These people now hope for a new life, a place in the sun again.

DEVELOPMENT PROGRAMS

651 382 The internationally-owned oil companies operating in Iraq recently have increased oil output materially and expect by 1955 to be producing at a rate five times above the 1951 level. Half of the profits before taxes will accrue to the Iraq Government, and should amount to about $600 million during the next five years.

647 654 These revenues will be assigned to the Central Development Board, an autonomous agency established to insure greater continuity in the planning and implementation of development programs. An American, Wesley Nelson, formerly Assistant Commissioner of the Bureau of Reclamation in the United States Department of Interior, is a member of the board by invitation of the Iraq Government.

FINANCING

652 654 The Board is following rather closely a development program recommended by the International Bank for Reconstruction and Development after its special mission made a detailed study of the Iraq economy at the request of the government. The cost of the suggested five-year program, beginning with fiscal 1952-53, is estimated at approximately $471.8 million to be apportioned as follows:

Project	*In Millions of Dollars*
Flood control, irrigation, and drainage	154.5
Industry	103.6
Transport and communications	86.8
Community Facilities	65.0
Agriculture and Forestry	21.0
Education	17.1
Public Health	14.0
Development Board administration, studies, etc.	4.2
Miscellaneous expenditures	5.6
	471.8

To carry out the program the Development Board would have to spend $42 million in 1952-53 and successively larger sums each year, up to a total of $140 million in 1956-57.[32]

[32] *Economic Development of Iraq*, International Bank for Reconstruction and Development, 1952, p. 63.

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The program is undoubtedly ambitious. It requires a rate of progress unprecedented for a country which for many centuries remained virtually static and which over recent decades has developed at a relatively slow pace. There is no assurance that the program can be carried out over the next five years. Yet the Mission thought it important to set up targets, even ambitious targets, toward which the country can strive. If successful, the program will bring about a profound economic and social transformation, with far-reaching repercussions.

The International Bank concludes that the country will need no further foreign loans except possibly to meet part of the hard currency needs.[34] The oil revenues will be received in the form of sterling. However, under a new agreement, the United Kingdom has undertaken to furnish sufficient dollars against sterling to cover Iraq's essential needs.

The International Bank in 1950 already had loaned $12.8 million to Iraq, primarily for flood control, irrigation, and road construction. Apparently the Bank is willing to consider further loans, but the Iraqi are not interested as long as the oil revenues continue and they are able to get sterling converted into dollars.

TECHNICAL ASSISTANCE

A number of organizations are providing technical assistance to Iraq in its development program, notably the United States Point Four Program and the United Nations' Food and Agriculture Organization.

Point Four began its program early in 1952 in such fields as cotton agronomy, farm machinery, agricultural extension and vocational education, irrigation, entomology, rural health, sanitation, and industrial development. About 25 Americans have been employed, and the number may be doubled by the end of the year. Most of the Point Four funds go for salaries; the costs of tools and materials are assumed by the local government. The specialists in Iraq obviously were chosen for their competence, practical experience, and their interest in the assignment. They are anxious to develop the most desirable means of approaching the problem.

The Food and Agriculture Organization has about 11 specialists regularly employed in the country in such fields as soils, cooperatives, bacteriology, veterinary science, nutrition, agricultural statistics, farm mechanization, and home economics. The program may be extended to cover agricultural research, extension, underground water and drainage, forestry, and fisheries.

The FAO operates almost entirely at the government level; Point Four seeks to go beyond government planning to the grass roots.

INDUSTRY

The people of Iraq, in common with their neighbors of the Middle East, live almost entirely by agriculture. About 80 per cent of the population earns its living directly from the soil, and most of the others indirectly.[35] Industry is still relatively undeveloped. Apart from the oil industry, which employs about 12,000 people, probably not more than 2,000 people are employed in what are called modern industrial plants.

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34 *Ibid.*, p. 62.
35 *Ibid.*, p. 43.

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COTTON IN THE MIDDLE EAST

RESEARCH AND EDUCATION

654 242 At present the Department of Agriculture has less than 25 qualified agriculturists capable of research and educational work, and most of their time is said to be devoted to administrative and regulatory tasks.[49] A complete program in research and extension is needed. Such a program is being developed gradually now with the help of the various technical assistance agencies.

CREDIT

452 652 Production credit facilities are almost non-existent. An effort is being made, however, to increase the resources of the state-owned agricultural bank to provide adequate production credit and to establish storage facilities for crops. According to the United Nations' special reports, moneylenders' interest rates to farmers for crop production were 30 to 40 per cent before the government recently established the agricultural bank.

COTTON

248 Cotton has never been particularly important in Iraq, from the standpoint of either the acreage involved or the total production. Its potential, however, is great.

Table 33

IRAQ: Statistics on Cotton Production and Distribution Specified Years, 1920-1951

Year beginning August 1	Acreage	Yield per Acre	Production	Consumption	Exports	Imports
	Acres	Pounds	Bales			
Average 1920-24	NA	NA	808	NA	NA	NA
Average 1925-29	NA	NA	2,977	NA	NA	NA
Average 1930-34	2,751	159	1,240	NA	NA	NA
Average 1935-39	53,099	97	10,772	NA	NA	NA
Average 1940-44	72,000	62	9,469	NA	10,477	2,845
Average 1945-49	21,619	100	4,493	4,000	2,153	2,733
1950	100,000	183	38,121	7,000	31,000	0
1951	135,000	135	38,000	16,000	1,887[1]	

[1] Exports, August through November.

SOURCE: Office of Foreign Agricultural Relations, United States Department of Agriculture, and International Cotton Advisory Committee.

Before the war, production averaged only about 12,000 bales and slightly less in the postwar years through 1949. Higher prices throughout the world, together with the export controls imposed by the United States and the shortage of cotton, sent production to about 38,000 bales. It would have been three to four times as large on the basis of the planted acreage had it not been for heavy insect damage.

AREA

About two-thirds of the cotton is produced under irrigation in the vicinity of Baghdad and Kut on the Euphrates and Tigris Rivers. These two areas, together with three or four other smaller ones, account for about 88 per cent of production. Some 10 to 12 per cent is produced in Northern Iraq, mostly around Mosul, and about 2 per cent in Southern Iraq, from Basra north along the river.

[49] *Economic Development of Iraq*, *op. cit.*, pp. 98-99.

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other commodities. As might be expected in such a situation, the system of classification is limited. The cotton is usually sold on types. Ginners indicate they will buy and sell cotton themselves in the future as in many other countries. 442

The one large cotton spinning mill is putting in its own gin to supply the mill with its requirements of around 15,000 bales annually. This will restrict merchandising to exports unless and until another mill is built.

OIL MILLS 388

There is one oil mill which crushes the largest part of the seed produced. The rest is exported. The capacity of this plant is to be increased and facilities for processing oil products are being added.

EXPORTS 439

Iraq has exported approximately 18,000 bales during each of the past two years, mostly to Germany and Japan, with smaller quantities to Holland, Italy, Spain, and the United Kingdom.

IMPROVEMENT PROGRAMS 248 654

The Director General of Agriculture has promulgated an ambitious 10-year program for increasing cotton production to about 500,000 bales. In time, he believes that on the basis of the available land and water Iraqi production can be boosted to more than a million bales. While admitting his program is ambitious, the Director General appears to be firmly convinced it can be accomplished, given adequate technical assistance.

United States agricultural experts with the Point Four Program are inclined to agree that the country's natural resources can support a potential cotton production of this magnitude. The rate of increase, they think, will depend on how effectively the technical resources of the country are organized and applied.

The Director General is highly regarded for his technical as well as his administrative ability and particularly for his driving force. He is especially well qualified to direct the cotton improvement program, having graduated in cotton agronomy from Texas A. & M. College.

Long-Range

For long-range improvements he is depending on the agricultural research agencies now being organized to develop better varieties, more effective irrigation and cultural practices, better insect control techniques, and improved methods of classification and marketing. Still in the planning stages, the research program has done some fairly effective work, especially on variety selection, propagation, and fertilization.

Insect Control

One of the main research problems is the control of insects. The government estimates that 75 per cent of the 1951 cotton crop was destroyed by insects, principally by the spiney bollworm, *Earis insulana* (Boisd.), a white fly that attacks the leaves, and by aphids. Fortunately, the Director said, the pink bollworm has not made its appearance in the country. Experiments are 242

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242 134 for centuries, and farmers have depended on the silt deposited from the overflows to maintain the fertility. Increased use of canals and dams for irrigation has made the overflows less frequent. Experiments conducted for the past three or four years with commercial fertilizers have shown no significant benefit, but the United States experts feel the tests are not conclusive and should be continued with various soil conditioners.

While depending on basic research to stimulate long-range production, the Director General is trying to force an immediate improvement through regulations requiring the application of techniques known to be beneficial.

248 656 *Controls*

In an effort to concentrate cotton production on the better suited lands and to facilitate insect control, seed control, and other beneficial measures, regulations have been promulgated requiring government permits for all cotton acreage planted. These permits, based primarily on suitability of the soil and availability of water and labor, are issued on the recommendation of local representatives of the Ministry of Agriculture. However, the enforcement system is inadequate, and it is generally admitted that the regulation is not closely followed, especially in areas where the local sheiks are extremely powerful and are practically a law unto themselves.

654 242 407

—*Photo Courtesy of Technical Cooperation Administration*

At the government cotton experimental farm near Baghdad a double-handled board is used to level the high spots in a newly ploughed field. Outside the government farms little leveling is done. Through the Point Four Program the United States is cooperating with the Iraq Government in experiments and demonstrations to improve cotton cultural practices.

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tributed into small plots for purpose of development shall be entrusted with the distribution of water within the project's areas (Article 11, para. 3) and water distribution shall be confined to the lands of the project (Article 11, para. 1).

1) The Use of Water for Irrigation Purposes

Notification No. 226 of the Minister of Communications and Works dated 9 June 1927, issued under the Irrigation Law of 1923, declares all rivers (anhar) and waterways (majari) in Iraq to be "Irrigation Works." This term covers irrigation and flood protection works as well as areas, occupied by or required for the construction or maintenance of such works. The right of undertaking irrigation works on privately owned lands is granted (Art. 3) to the Government, provided the land so required for the works is expropriated according to Law, once the proposed works have been declared to be of public utility. A private owner wishing to carry out works on or through another person's property shall obtain a certificate from the Executive Irrigation Engineer, stating the necessity of such works together with their extent and probable effect on neighboring lands. The applicant remains responsible for the acquisition, lease or arrangement with the interposed owners (Art. 4).

Requests from particulars for constructing any irrigation works are submitted to the mutassarrif of the Liwa concerned. If such requests are not rejected for administrative reasons, they are transmitted to the Executive Irrigation Engineer who may reject them on technical ground or otherwise issue the necessary permit on Irrigation Form No. 44, embodying instructions constituting the specifications of the work for which approval has been granted. The Law does not confer "water rights," but when a permit is issued and implies use of water, it is henceforth recognized that the land to be brought under cultivation shall enjoy the use of water under conditions similar to others within the same district.

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All irrigation works of public importance shall be constructed, repaired and maintained by and remain under the control and supervision of the Irrigation Department, even when such works have been declared to have ceased to be of public importance (Art. 6). The Executive Irrigation Engineer may require the person responsible with the maintenance of watercourses (channels not maintained by the Government, Art. 2, para. 4),

to carry out the necessary repair work and in the event of failure, the said Engineer may execute such work at the expense of the defaulter. If damage has been caused to structures and the offender is not found then the owners of the lands depending on the watercourse shall be held jointly responsible (Article 7). A "Notice of Repair or Removal" on Irrigation Form No. 45, is used for the repair, removal or reconstruction of works as defined under Articles 4, 7, and 11 of the Law. 312 647 654

The Irrigation Engineers shall determine the dimensions of canals and watercourses, the lands and areas which may be irrigated from such canals and watercourses (Article 5). The distribution of water is carried out by the Irrigation Department up to a point below the heads of the watercourses (Article 8). Interference with another person's water supply, or the opening of any outlet which has been closed by competent authority or the taking of water from a source other than that prescribed by the Executive Irrigation Engineer, are not permitted (Article 10).

Article 9 prescribes that the Executive Irrigation Engineer shall have the power to stop the water supply to any watercourse in the following cases:

a) for the purpose of executing irrigation works;

b) whenever the watercourse is not maintained in such repair as to prevent the wasteful escape of water;

c) to supply water in rotation;

d) whenever wastage or misuse of water takes place;

e) whenever notices issued or demands made have not been complied with regarding (i) maintenance and repair of works (Article 7); (ii) supply of able-bodied persons for undertaking either work or repairs to works for preventing loss of life or serious damage to property and land (Article 13) or repairs and maintenance of irrigation works (Article 14). This notice shall be called "Notice of Stoppage of Water."

Article 11 states that no person shall construct any building, canal or watercourse, erect any pump, water lift or water wheel, plant any crops within the boundaries of any irrigation area without the written approval of the Executive Engineer, who

312 may order the offender to remove the unauthorized structure with-
647 in 15 days of the date of notice served on Irrigation Form No.
654 45. Should he fail to comply with the instructions contained in the Notice, the work of removal may then be carried out by the Executive Engineer and cost recovered from the offender.

If the water supplied is used in an unauthorized manner or causes damage to the lands, and if the persons responsible cannot be discovered, the person or persons on whose land such water flowed shall be held responsible. Such person shall be liable to a fine not exceeding 20 rupees per mashara 1/ of inundated land.

2) Requisition of Labour

Article 13 provides for the recruiting at rates of pay to be fixed by the Executive Engineer in consultation with the Mutassarrif, of able-bodied persons whenever workers for the immediate execution of emergency or repair works for preventing loss of life or serious damage to land and property cannot be obtained in the ordinary manner. For the purpose of the repair and maintenance of irrigation works, the person who will benefit from their being in good condition and will lose if otherwise, may be called on to furnish the necessary labor (Article 14).

The Executive Engineer may call on the mutassarrif or qaimaqam (sub-prefect or sub-governor) to raise the necessary labor contingent. To this end, the mutassarrifs shall furnish the Director of Irrigation with two statements every year, before the tenth of August: the first statement (Irrigation Form No. 47) shall show the total number of able-bodied men of laboring class residing in the Liwa, for purpose of Article 13. The second statement (Irrigation Forms 48 and 48A) shall show the total labor residing in the Liwa available for work under Article 14, during three different periods, i.e.: September to December - January to April - May to August. The requisition of labor, urgent (Art. 13) or otherwise (Art. 14) is made on Irrigation Forms 49 and 50 respectively.

Any person who refuses or neglects to supply labor as provided for in the two above-mentioned articles of the Law, shall upon conviction be liable to a fine not exceeding Rs. 500 or to

1/ 20 rupees = ID. 1/500 = $6.00; mashara = 1/4 hectares = 0.618 acres

64: Shwadran S-4 (no date) 1955 Ml Middle East
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progress, discouraging both to the educators and to the Iraqi people, reflects on the possibilities of development, which in the final analysis depend on the general educational level of the population. To be sure, in the period 1930-1950 the number of schools rose from 262 to 1,100, the number of pupils from 32,750 to 175,000, and the number of primary school teachers from 1,325 to 6,588; nevertheless, out of about 750,000 children of school age only 175,000 were in schools; the percentage of drop-outs as the children advanced to the higher grades was so large as to cause real alarm. The facilities and quality of technical and vocational education were woefully deficient, and adult education was almost completely neglected. As to the quality of the educational program, the Mission stated: "Educational concepts are far too narrow and too little related to everyday problems of living." But what was most alarming was the fact that as late as 1951 about 90 per cent of the total population was still illiterate.[10]

Though possessing so much land, so much water, and considerable revenue from oil, Iraq's standard of living was fairly low. Annual per capita income was estimated in 1949 at about $84 and not much higher in 1953.[11] This compared with $140 for Lebanon, $100 for Syria, $125 for Turkey, $100 for Egypt, and $389 for Israel.

Industrial growth advanced at a very slow pace. In order to stimulate the establishment of industry, the Government passed a law in 1929 granting tax relief and other concessions to those who would develop industrial projects, but almost twenty years later the United States Department of Commerce reported that the development of manufacturing industries was still in the embryonic stage.[12] In 1949 it was reported that in spite of the impetus given to local production by the shortage of import goods during the war, Iraq's industries were still underdeveloped.[13] In 1951 the International Bank Mission reported that industry was little developed; that exclusive of those employed by the oil companies, 60,000 workers were engaged in

[10] International Bank, *Iraq Mission Report*, 62-63; "The Economic Development of Iraq," *The Times Review of Industry* (London), Sept., 1953, 93.
[11] U. N., *Review 1949-50*, 12; "The Economic Development of Iraq," *The Times Review of Industry*, Sept., 1953, 93.
[12] U. S., Dept. of Commerce, *International Reference Service*, Dec., 1948, 3.
[13] Great Britain, *Iraq*, 16.

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464 late June and threshing proceeds steadily from July to October. The
241 much smaller rice harvest comes about the end of September. With less wheat and no rice, threshing could be finished by mid-september leaving labour free for the main work of the tobacco harvest. On the other hand the tobacco plant requires a good deal of finicky attention during the early stages of its growth which coincide with the wheat harvest. It is possible therefore that any radical increase in the tobacco cultivation is dependent upon the introduction of improved methods of threshing. A much greater difficulty arises from the fact that the change in labour requirements would not be equally distributed as between different households. Whereas at present each household has approximately the same programme of work, the situation would be greatly complicated if one man's land was devoted to tobacco and his neighbour's only to wheat. The difficulty could be avoided if all the tobacco cultivation were 'owned' by the Agha; - the commoner being under obligation to work for his Agha but not for a fellow commoner. Such a development would never be countenanced by the Government however since the system would be regarded as "exploitation" of the tribesman by his chief.*

249 Capital. The additional capital required for tobacco as opposed
Iraq to cereal cultivation is not very significant. The Government is
635 prepared to supply seed and expert advice; so far as I know the process
● 654 of drying does not require any special technical apparatus. The re-organisation of the irrigation system would of course be an initial 'capital' expenditure for the community concerned.

Technique. On the other hand the mere statement that Government is prepared to offer expert advice rather oversimplifies the social aspects of the technical problem. I have already mentioned that the native Kurdish tobacco cured in the traditional manner results in a powdery substance that is quite useless for the purposes of a modern factory. In order to produce a marketable product, the farmer has to be taught entirely new methods. The reformer is here up against several types of difficulty. Firstly there is a simple conservative resistance, the dislike of new methods, not simply because they are new but because the practitioner in the old methods thinks he knows best. But there are other difficulties of a much more intricate kind. Here is an example.

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249 The Government are prepared to supply approved villages with a
609 trained expert to supervise the growing and harvesting of tobacco.
Iraq Such a man was supplied to the village of Walash. He was a Kurd, but a townsman from the plains and by mountain standards a man of low moral
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* In Batas, where in functional terms the Assyrian Bishop takes the place of the Agha, the tobacco crop is owned by the Church, and difficulties over individual labour requirements thus avoided. But then a Christian Bishop is obviously not the same thing as a tribal Agha!

16: Leach E-5 (1938) 1940 MAI Iran
Kurd MAII
Iraq MHI

character; it was alleged that he corrupted the villagers with alcohol and gambling and attempted to seduce their daughters, in particular the Mulla's daughter, in fact he was altogether a scoundrel. In due course he was found in the high road with two bullets through his body. The police took action. Two harmless looking nomads from another tribe were brought before the courts and on the basis of somewhat elaborate circumstantial evidence convicted of murder. Sentence however was never carried out since the "criminals" curiously disappeared a few days after the trial. Whatever was the truth of this matter, local rumour had no doubts on the subject. The bullet wounds, the arrest and conviction of the nomads were all a frame up by the police, who had the sense not to fish in troubled waters. The murdered man had really died of strangulation - hanged in the Guest House of Sheikh Mohammad, Agha of Walash and chief of the Balik.

This story was told me by Hamid Amin of Nanpurdan who was always eager to cast a slur on his cousin Sheikh Mohammad. It appeared however to have some general currency since, when I was discussing the misdemeanours of the local schoolmaster with the Agha of Rayat, he referred to the Walash story. "These small Government servants! What do you expect? They're all scoundrels".

Whether the story is true or not is irrelevant, its effect among the Balik is the same as if it had been true. Even though Sheikh Mohammad's prestige is not so great as formerly, the fact, or even the rumour, that he had to hang his first and only agricultural adviser is a sufficient deterrent for any lesser Aghas who may be contemplating agricultural reform within their own communities. This example brings out well how a problem which on the surface is purely economic may in practice be effected by a mass of seemingly irrelevant considerations in the field of ethics, tribal law, politics and religion.

To sum up then. We have seen how the necessity for developing an export trade implies the necessity for increasing the tobacco acreage at the expense of cereal acreage, and I have tried to analyse out the forces of resistance which serve to prevent any immediate response to this incentive. Nevertheless the incentive is clearly very great. I was told for instance in Batas that whereas in the old days the crops of the entire village had been worth barely £50 in cash, the tobacco sales in 1937 alone totalled £2,500. I believe therefore that in the hills also some radical alteration in the emphasis of agriculture must take place in the near future.

But it must be recognised that any such development must bring about fundamental changes both in the ideology of the people and of their social organisation. As things are, the hill country farmer sets out first of all to grow sufficient food for himself and his family. Only when he is assured of that does he turn his attention to the cultivation of luxury products such as tobacco. In short he aims at